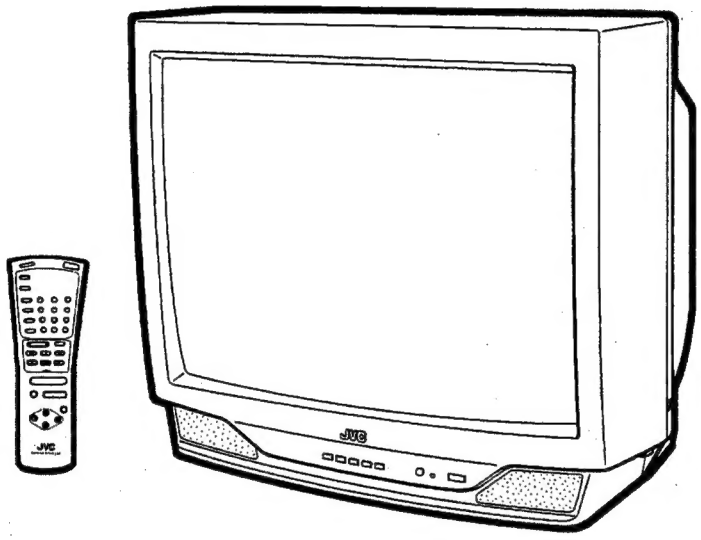
JVC

SERVICE MANUAL

COLOR TELEVISION

BASIC CHASSIS
FV

AV-27920(US&CA)



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No. 51370
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SPECIFICATIONS

Items	Contents
Dimensions (W × H × D)	25-3/4" × 23-3/8" × 19-1/2" / 65.4cm × 59.3cm × 49.4cm
Mass	68.5 lbs / 31.1 kg
TV RF System	CCIR(M)
Color Sound System	NTSC, BTSC System (Multi Channel Sound)
TV Receiving Channels and Frequency	
VL Band	(02~06) 54MHz~88MHz
VH Band	(07~13) 174MHz~216MHz
UHF Band	(14~69) 470MHz~806MHz
CATV Receiving Channels and Frequency	
Low Band	(02~06, A-8) by (02~06&01)
High Band	(07~13) by (07~13)
Mid Band	(A~1) by (14~22)
Super Band	(J~W) by (23~36)
Hyper Band	(W+1~W+28) by (37~64)
Ultra Band	(W+29~W+84) by (65~125)
Sub Mid Band	(A8, A4~A1) by (01, 96~99)
	(54MHz~804MHz)
TV/CATV Total Channel	180 Channels
Intermediate Frequency	
Video IF Carrier	45.75MHz
Sound IF Carrier	41.25MHz (4.5MHz)
Color Sub Carrier	3.58MHz
Power Input	120V AC, 60Hz
Power Consumption	113W (US) / 1.8A (CA)
Picture Tube	27" (68cm) Measured Diagonally
High Voltage	29kV±1kV (at zero beam current)
Speaker	2" × 3-1/2" / 5 × 9cm Oval type × 2
Audio Power Output	1.2W × 2
Input	
Video Input	1Vp-p, 75Ω (RCA pin jack)
Audio Input	500mVrms (-4dBs), High Impedance (RCA pin jack)
Variable Audio Output	More then 0~1550mVrms (+6dBs) Low impedance (400Hz when modulated 100%) (RCA pin jack)
Antenna Terminal	75Ω (VHF/UHF) Terminal, F-Type Connector
Remote Control Unit	RM-C754-1C (AA/R6/UM-3 battery × 2)

Design & specification are subject to change without notice.

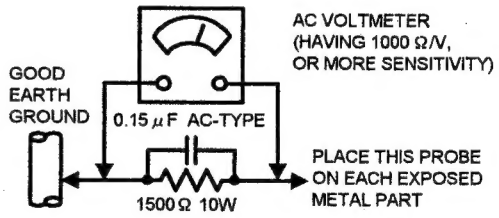
SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.
4. **Use isolation transformer when hot chassis.**
   The chassis and any sub-chassis contained in some products are connected to one side of the AC power line. An isolation transformer of adequate capacity should be inserted between the product and the AC power supply point while performing any service on some products when the HOT chassis is exposed.
5. **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
   Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED(NEUTRAL) : (⏚) side GND and EARTH : (⏚) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.
   If above note will not be kept, a fuse or any parts will be broken.
6. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).
7. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.
8. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.
9. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.
10. **Isolation Check**
    (Safety for Electrical Shock Hazard)
    After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

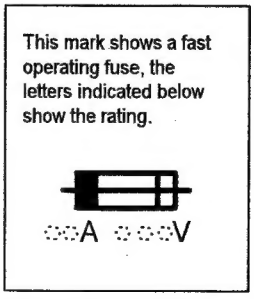
(1) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 1100V AC (r.m.s.) for a period of one second.
(. . . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires a test equipment not generally found in the service trade.

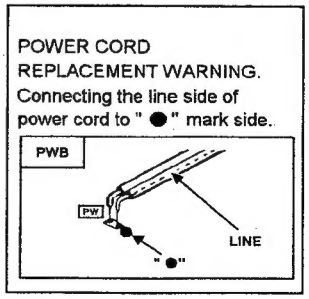
(2) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

● **Alternate Check Method**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



11. **High voltage hold down circuit check.**
    After repair of the high voltage hold down circuit, this circuit shall be checked to operate correctly.
    See item **"How to check the high voltage hold down circuit"**.





FEATURES

- New chassis design enables use of a single board with simplified circuitry.
- Provided with miniature tuner (TV/CATV).
- Multifunctional remote control permits picture adjustment.
- Adoption of the CHANNEL GUARD function prevents the specific channels from being selected, unless the "ID number" is key in.
- I^2C bus control utilizes single chip ICs.
- Built-in HYPER-SURROUND system.
- Adoption of the VIDEO STATUS function.
- Adoption of the ON/OFF TIMER function.
- With 75Ω V/U in common (F-Type) ANT Terminal.
- SLEEP TIMER for setting in real time.
- Closed-caption broadcasts can be viewed.
- S-VIDEO input terminal for taking best advantage of Super VHS.
- Audio Video input terminal.
- Variable Audio output terminal.
- Built-in MTS system.

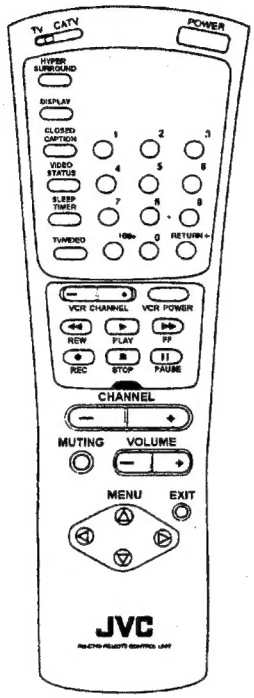
DIFFERENCE LIST OF MAIN PARTS

⚠	Parts Name	AV-27920(US)	AV-27920(CA)
⚠	RATING LABEL	CM23034-001-A	CM22999-001-A
⚠	INST BOOK (FRENCH)	×	LCT0108-001B-A
	SVC CENTER LIST	×	BT-20071B-Q
	REGI. CARD	BT-51006-1Q	×
	WARRANTY CARD	×	BT-52002-1Q

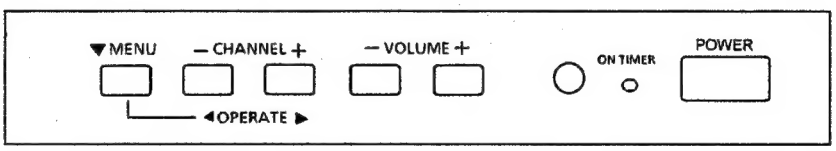
OPERATING INSTRUCTIONS

- The operating instructions are the same as for C-20910(US&CA)/AV-20920(US&CA)/AV-20921(US&CA) (No.51364).
  Therefore, please refer to the C-20910(US&CA)/AV-20920(US&CA)/AV-20921(US&CA)(No.51364) SERVICE MANUAL for detailed instructions.

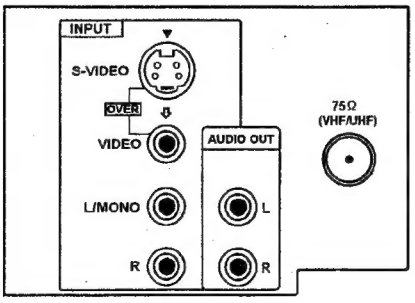
■ REMOTE CONTROL UNIT [RM-C754-1C]



■ FRONT PANEL



■ REAR PANEL



SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

REMOVING THE REAR COVER

1. Unplug the power supply cord.
2. Remove the 7 screws marked Ⓐ and 2 screws marked Ⓑ as shown in Fig.1.
3. Withdraw the REAR COVER toward you.

[CAUTION]
- When reinstalling the rear cover, carefully push it inward after inserting the MAIN PWB into the rear cover groove.

REMOVING THE MAIN PW BOARD

- After removing the rear cover.

1. Pick this side of the MAIN PWB and raise one slightly, take off the PWB stopper marked Ⓒ from the cabinet bottom.
2. Pull out the MAIN PWB as it is.
   (If necessary, take off the wire clamp and connectors, etc.)

REMOVING THE SPEAKER

- After removing the MAIN PW board.

1. Remove the 2 screws marked Ⓓ as shown in Fig.1.
2. Withdraw the speaker backward.
3. Follow the same steps when removing the other hand speaker.

CHECKING THE MAIN PW BOARD

1. To check the back side of the MAIN PW Board.
   1) Pull out the MAIN PWB. (Refer to REMOVING THE MAIN PWB).
   2) Erect the chassis vertically so that you can easily check the back side of the MAIN PW Board.

[CAUTION]
- When erecting the MAIN PWB, be careful so that there will be no contacting with other PW Board.
- Before turning on power, make sure that the CRT earth wire and other connectors are properly connected.

WIRE CLAMPING AND CABLE TYING

1. Be sure clamp the wire.
2. Never remove the cable tie used for tying the wires together. Should it be inadvertently removed, be sure to tie the wires with a new cable tie.

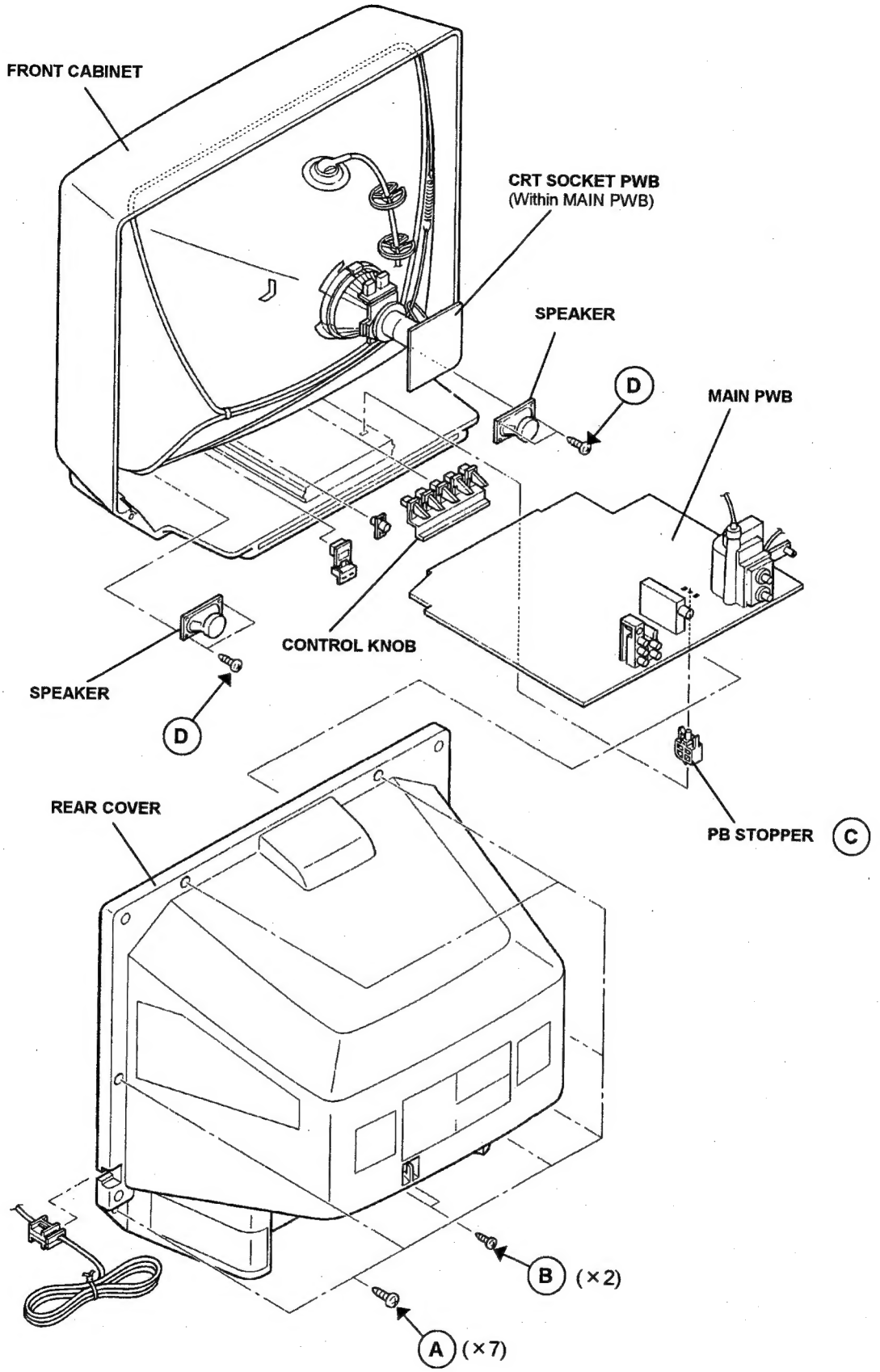

FRONT CABINET
CRT SOCKET PWB
(Within MAIN PWB)
SPEAKER
D
MAIN PWB
CONTROL KNOB
SPEAKER
D
PB STOPPER
C
REAR COVER
B (×2)
A (×7)

Fig.1

MEMORY IC REPLACEMENT

1. Memory IC

This model use a memory IC.
This memory IC stores data for proper operation of the video and deflection circuits.
When replacing, be sure to use an IC containing this (initial value) data.

2. Memory IC replacement procedure

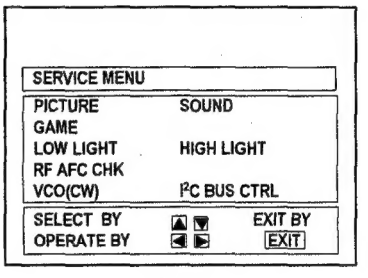
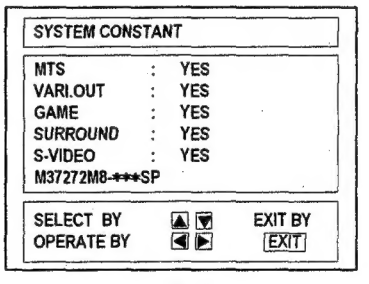
Procedure	Screen display
(1) Power off Switch off the power and disconnect the power cord from the outlet.	
(2) Replace the memory IC Initial value must be entered into the new IC.	
(3) Power on Connect the power cord to the outlet and switch on the power.	
(4) System constant check and setting 1) Simultaneously press the DISPLAY key and VIDEO STATUS key of the remote control unit. 2) The SERVICE MENU screen of Fig.1 is displayed. 3) While the SERVICE MENU is displayed, again simultaneously press the DISPLAY and VIDEO STATUS keys to display the Fig.2 SYSTEM CONSTANT screen. 4) Refer to the SYSTEM CONSTANT table and check the setting items. Where these differ, select the setting item with the MENU UP/DOWN key and adjust the setting with the MENU LEFT/RIGHT keys. (The letters of the selected item are displayed in yellow.) 5) After adjusting, release the MENU LEFT/RIGHT key to store the setting value. 6) Press the EXIT key twice to return the normal screen.	 Fig.1  Fig.2
(5) Receive channel setting Refer to the OPERATING INSTRUCTIONS(USER'S GUIDE) and set the receive channels (Channels Preset) as described.	
(6) User settings Check the user setting items according to Table 2. Where these do not agree, refer to the OPERATING INSTRUCTIONS (USER'S GUIDE) and set the items as described.	
(7) SERVICE MENU setting Verify what to set in the SERVICE MENU, and set whatever is necessary.(Fig.1) Refer to the SERVICE ADJUSTMENT for setting.	

TABLE 1 (System Constant setting)

Setting item	Setting content	Setting value
MTS	YES → NO	YES
VARI.OUT	YES → NO	YES
GAME	YES → NO	YES
SURROUND	YES → NO	YES
S-VIDEO	YES → NO	YES

TABLE 2 (User setting value)

Setting item	Setting value
1. Use remote controller keys	
POWER	OFF
CHANNEL	CH 02
CHANNEL PRESET	See OPERATING INSTRUCTIONS.
VOLUME	10
TV/VIDEO	TV
DISPLAY	OFF
SLEEP TIMER	0(OFF)
VIDEO STATUS	STANDARD
CLOSED CAPTION	OFF(CC1/T1)
HYPER SURROUND	OFF
2. Setting of MENU	
TINT	CENTER
COLOR	CENTER
PICTURE	CENTER
BRIGHT	CENTER
DETAIL	CENTER
NOISE MUTING	ON
SET VIDEO STATUS	ALL CENTER
BASS	CENTER
TREBLE	CENTER
BALANCE	CENTER
MTS	STEREO
TV SPEAKER	ON
SET CLOCK	Unnecessary to set
ON/OFF TIMER	NO
CHANNEL SUMMARY	SET OPTIONALLY
SET LOCK CODE	Unnecessary to set
AUTO TUNER SETUP	TUNER MODE : AIR
BACKGROUND	BLACK
CLOSED CAPTION	CAPTION : CC1 TEXT : T1
LANGUAGE	ENG

SERVICE ADJUSTMENT

ADJUSTMENT PREPARATION:

1. **You can make the necessary adjustments for this unit with either the Remote Control Unit or With the adjustment tools and parts as given below.**
2. **Adjustment with the Remote Control Unit is made on the basis of the initial setting values, however, the new setting values which set the screen to its optimum condition may differ from the initial settings.**
3. Turn on the power for set and test equipment before use, and start the adjustment procedures after waiting at least 30 minutes.
4. Make sure that AC power is turned on correctly.
5. Unless otherwise specified, prepare the most suitable reception or input signal for adjustment.
6. Never touch any adjustment parts which are not specified in the list for this adjustment - variable resistors, transformers, condensers, etc.
7. Presetting before adjustment.
   Unless otherwise specified in the adjustment instructions, preset the following functions with the remote control unit:

● VIDEO STATUS	STANDARD
● BASS, TREBLE, BALANCE	CENTER
● HYPER SURROUND	OFF

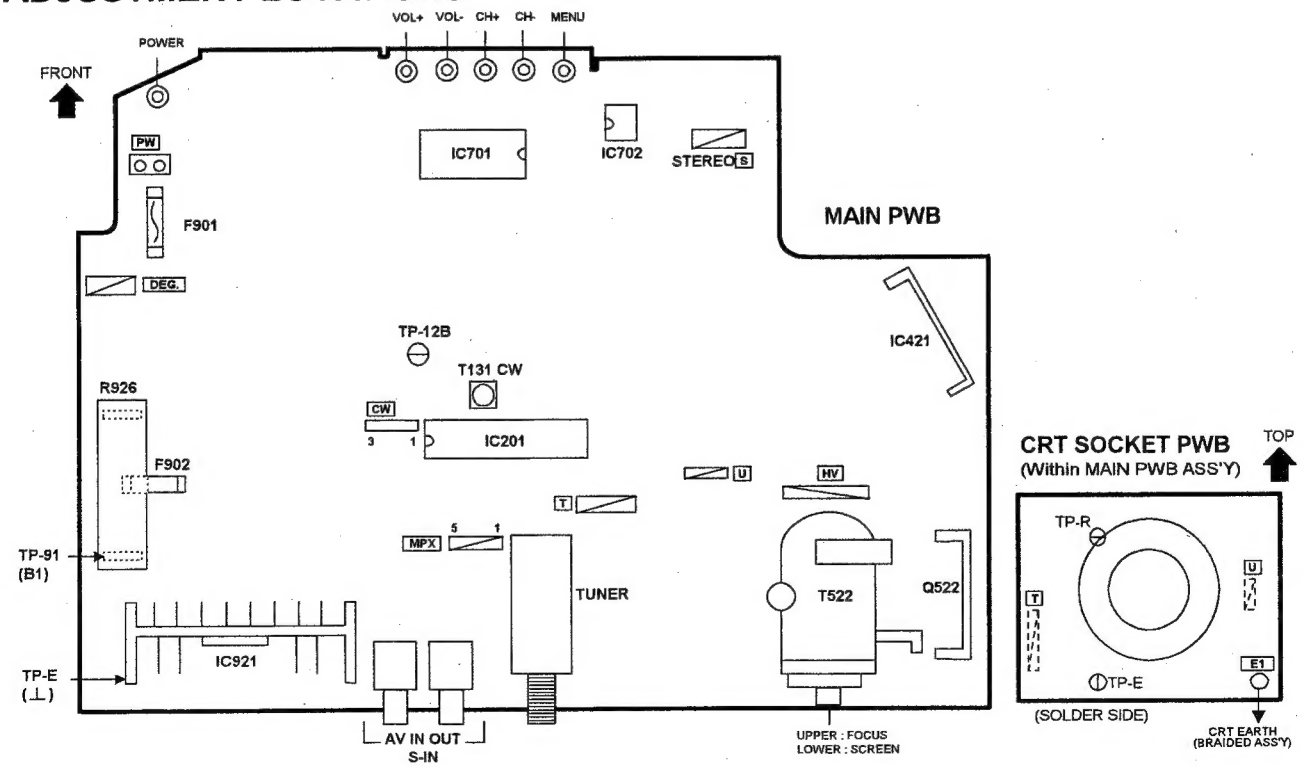
ADJUSTMENT EQUIPMENT

1. DC voltmeter (or digital voltmeter)
2. Oscilloscope
3. Signal generator (Pattern generator) [NTSC]
4. Remote control unit
5. TV audio multiplex signal generator.
6. Frequency counter

ADJUSTMENT ITEMS

Adjustment items	Adjustment items	Adjustment items
B1 POWER SUPPLY	WHITE BALANCE (Low Light)	MTS INPUT LEVEL check
IF VCO	WHITE BALANCE (High Light)	MTS STEREO VCO
RF. AGC	SUB BRIGHT	MTS SAP VCO
FOCUS	SUB CONTRAST	MTS FILTER check
V. SIZE	SUB COLOR	MTS SEPARATION
H. POSITION	SUB TINT	

ADJUSTMENT LOCATIONS



BASIC OPERATION OF SERVICE MENU

1. Operate the SERVICE MENU with the REMOTE CONTROL UNIT.

2. In general, 8 basic setting (adjustments) items or verifications are performed in the SERVICE MENU.

(1) PICTURE ····· This sets the setting values (adjustment values) of the VIDEO/CHROMA and DEFLECTION circuits.
(2) SOUND ····· This sets the setting values (adjustment values) of the AUDIO circuit.
(3) GAME ····· This is used when the GAME MODE is adjusted.
(4) LOW LIGHT ····· This sets the setting values (adjustment values) of the WHITE BALANCE circuit.
(5) HIGH LIGHT ····· This sets the setting values (adjustment values) of the WHITE BALANCE circuit.
(6) RF AFC CHK ····· This is used when the IF VCO is adjusted. **[Do not adjust]**
(7) VCO (CW) ····· This is used when the IF VCO is adjusted.
(8) I2C BUS CTRL ····· This is used when ON/OFF of the I2C BUS CTRL is set. **[Fixed ON]**

3. Basic Operations of the SERVICE MENU

(1) How to enter the SERVICE MENU.

Press the DISPLAY key and VIDEO STATUS key of the remote control unit at the same time to enter the SERVICE MENU screen ① shown in figure page later.

(2) SERVICE MENU screen selection

Press the UP / DOWN key of the MENU to select any of the following items.
(The letters of the selected items are displayed in yellow.)

- PICTURE
- SOUND
- GAME
- LOW LIGHT
- HIGH LIGHT
- RF AFC CHK
- VCO(CW)
- I^2C BUS CTRL

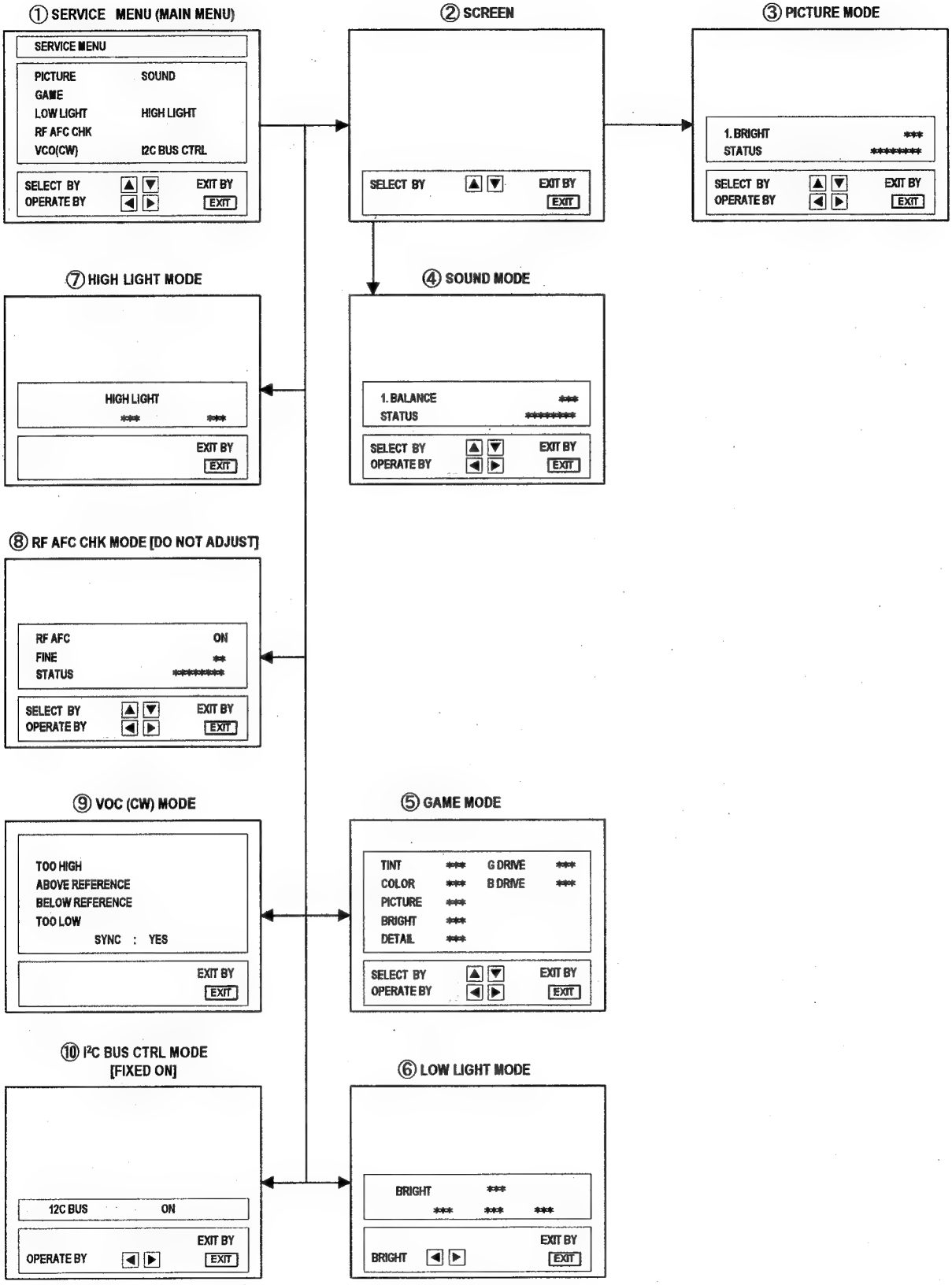
(3) Enter the any setting (adjustment) mode

- **PICTURE and SOUND mode**

1) If select any of PICTURE or SOUND items, and the LEFT / RIGHT key is pressed from SERVICE MENU (MAIN MENU), the screen ② will be displayed as shown in figure page later.
2) Then the UP / DOWN key is pressed, the PICTURE mode screen ③ or the SOUND mode screen ④ is displayed, and the PICTURE or SOUND setting can be performed.

- **GAME, LOW LIGHT, HIGH LIGHT, RF AFC CHK, VCO (CW) and I2C BUS CTRL mode**

1) If select any of GAME / LOW LIGHT / HIGH LIGHT / RF AFC CHK / VCO (CW) / I2C BUS CTRL items, and the LEFT / RIGHT key is pressed from SERVICE MENU (MAIN MENU), the screens ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ will be displayed as shown in figure page later.
2) Then the settings or verifications can be performed.

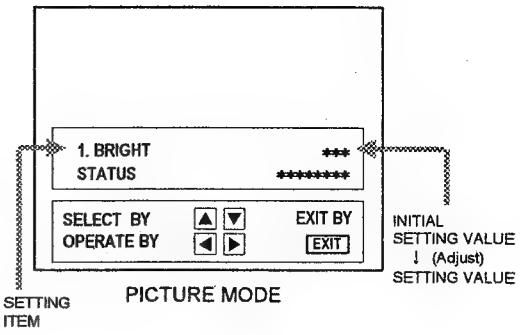

① SERVICE MENU (MAIN MENU)
SERVICE MENU
PICTURE
SOUND
GAME
LOW LIGHT
HIGH LIGHT
RF AFC CHK
VCO(CW)
I2C BUS CTRL
SELECT BY
OPERATE BY
EXIT BY
EXIT
② SCREEN
SELECT BY
EXIT BY
EXIT
③ PICTURE MODE
1. BRIGHT ***
STATUS ********
SELECT BY
OPERATE BY
EXIT BY
EXIT
④ SOUND MODE
1. BALANCE ***
STATUS ********
SELECT BY
OPERATE BY
EXIT BY
EXIT
⑤ GAME MODE
TINT *** G DRIVE ***
COLOR *** B DRIVE ***
PICTURE ***
BRIGHT ***
DETAIL ***
SELECT BY
OPERATE BY
EXIT BY
EXIT
⑥ LOW LIGHT MODE
BRIGHT ***
*** *** ***
EXIT BY
BRIGHT
EXIT
⑦ HIGH LIGHT MODE
HIGH LIGHT
*** ***
EXIT BY
EXIT
⑧ RF AFC CHK MODE [DO NOT ADJUST]
RF AFC ON
FINE **
STATUS ********
SELECT BY
OPERATE BY
EXIT BY
EXIT
⑨ VOC (CW) MODE
TOO HIGH
ABOVE REFERENCE
BELOW REFERENCE
TOO LOW
SYNC : YES
EXIT BY
EXIT
⑩ I²C BUS CTRL MODE
[FIXED ON]
I2C BUS ON
OPERATE BY
EXIT BY
EXIT

(4) Setting method

1) UP / DOWN key of the MENU
   Select the SETTING ITEM.

2) LEFT / RIGHT key of the MENU
   Setting(adjust) the SETTING VALUE of the SETTING ITEM.
   When the key is released the SETTING VALUE will be stored (memorized).

3) EXIT key
   Returns to the previous screen.



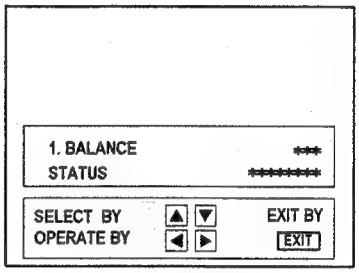
PICTURE MODE

(5) Releasing SERVICE MENU

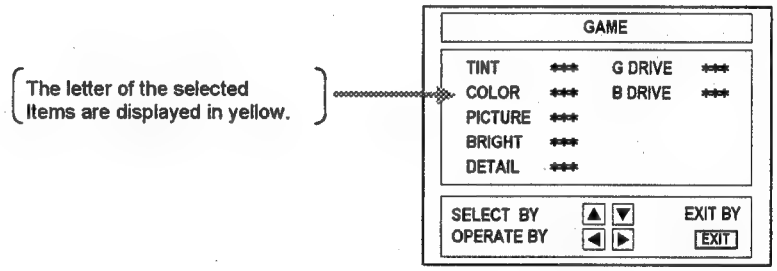
1) After returning to the SERVICE MENU upon completion of the setting (adjustment) work, press the EXIT key again.

★ The settings for LOW LIGHT and HIGH LIGHT are described in the WHITE BALANCE page of ADJUSTMENT.

★ The setting for VCO(CW) are described in the IF VCO page of ADJUSTMENT.



SOUND MODE



GAME MODE

INITIAL SETTING VALUE OF SERVICE MENU

1. Adjustment of the SERVICE MENU is made on the basis of the initial setting values; however, the new setting values which set the screen in its optimum condition may differ from the initial setting.
2. Do not change the initial setting values of the setting (Adjustment) items not listed in "ADJUSTMENT".

● PICTURE MODE

✧ The four setting items in the video mode No.8 EXT BRI., No.9 EXT PIC., No.12 EXT TINT and No.13 EXT COL. are linked to the items in the TV MODE No.1 BRIGHT, No.2 PICTURE, No.6 TINT and No.7 COLOR, respectively. When the setting items in the TV mode are adjusted, the values in the setting items in the video mode are revised automatically to the same values in the TV mode.(The initial setting values given in ( ) are off-set values.)

✧ When the four items (No.8, 9, 12 and 13) are adjusted in the video mode, the setting values in each item are revised independently.

No.	Setting (Adjustment) items	Variable range	initial setting value
1.	BRIGHT	0 ~ 127	64
2.	PICTURE	0 ~ 127	77
3.	WPS(WHITE PEAK SUPPRESSOR)	0 ~ 1	1
4.	TV DTL(TV DETAIL)	0 ~ 63	26
5.	TV BPF(TV B.P.FILTER)	0 ~ 1	0
6.	TINT	0 ~ 127	66
7.	COLOR	0 ~ 127	50
8.	EXT. BRI.(EXT.BRIGHT)	±25	(-2)
9.	EXT. PIC.(EXT.PICTURE)	±25	(±0)
10.	EXT. DTL(EXT.DETAIL)	0 ~ 63	26
11.	EXT BPF(EXT.B.P.FILTER)	0 ~ 1	0
12.	EXT. TINT	±25	(±0)
13.	EXT. COL.(EXT.COLOR)	±25	(+1)
14.	V. SIZE	0 ~ 63	38
15.	V. CENT.(V.CENTER)	0 ~ 7	0
16.	H. POS.(H.POSITION)	0 ~ 31	18
17.	OSD HP (OSD H POSITION)	0 ~ 31	23
18.	OSD VP (OSD V POSITION)	0 ~ 31	14
19.	H. AFC	0 ~ 1	0
20.	BLANKING	0 ~ 1	0
21.	Y. TRAP	0 ~ 1	0
22.	RF. AGC	0 ~ 63	40
23.	PIF VCO	0 ~ 127	64
24.	TV/EXT	0 ~ 1	0

● GAME MODE

Setting (Adjustment) item	Variable range	initial setting value
TINT	±20	0
COLOR	±20	0
PICTURE	±20	-10
BRIGHT	±20	-5
DETAIL	±15	+5
G DRIVE	-80~+50	0
B DRIVE	-80~+50	0

● SOUND MODE

No.	Setting (Adjustment) item	Variable range	Initial setting value
1.	BALANCE	0~63	32
2.	NOISE	0 / 1	1
3.	IN LEVEL (INPUT LEVEL)	0~63	30
4.	FH MON. (FM MONITOR)	0 / 1	0
5.	ST VCO (STEREO VCO)	0~63	20
6.	PILOT (PILOT CANCELER)	0 / 1	0
7.	FILTER	0~63	25
8.	LOW SEP. (LOW SEPARATION)	0~63	32
9.	HI SEP. (HI SEPARATION)	0~63	16
10.	5FH MON. (5FH MONITOR)	0~1	0
11.	SAP VCO	0~63	14
12.	IN GAIN (INPUT GAIN)	0~1	0
13.	FIL. OFF.	0~10	0

● LOW LIGHT MODE

Setting (Adjustment) item	Variable range	initial setting value
R CUTOFF	0 ~ 255	20
G CUTOFF	0 ~ 255	20
B CUTOFF	0 ~ 255	20

● HIGH LIGHT MODE

Setting (Adjustment) item	Variable range	initial setting value
G DRIVE	0 ~ 255	128
B DRIVE	0 ~ 255	128

● RF AFC CHK MODE

Setting (Adjustment) item	Variable range	initial setting value
RF AFC	ON / OFF	ON
FINE	-77 ~ +77	±××　(DO NOT ADJUST)

● I²C BUS CTRL MODE

Setting (Adjustment) item	Variable range	initial setting value
I²C BUS	ON / OFF	[Fixed ON]

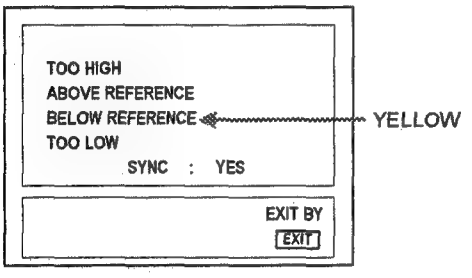
■ ADJUSTMENTS

B1 POWER SUPPLY

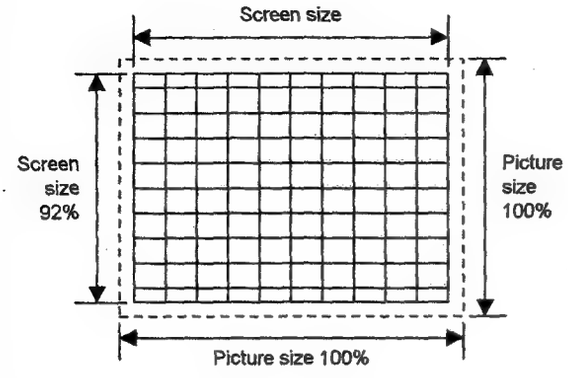
Item	Measuring instrument	Test point	Adjustment part	Description
Check of B1 POWER SUPPLY	DC Voltmeter	TP-91 (B1) TP-E(⊥)		1. Receive a monoscope pattern signal. 2. Connect the DC Voltmeter to TP-91 (B1) and TP-E(⊥). 3. Confirm that the voltage is DC134V $^{+2V}_{-2.5V}$.

ADJUSTMENT OF VIDEO / DEF. CIRCUIT

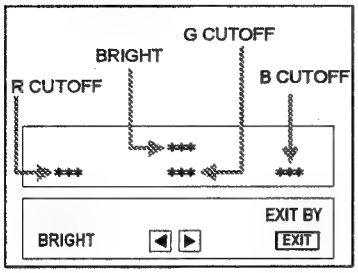
Item	Measuring instrument	Test point	Adjustment part	Description
IF VCO adjustment	Signal generator		CW TRANSF. (T131) [VCO(CW)] MODE	1. Receive a NTSC broadcast. (use channels without offset frequency). 2. Select the VCO(CW) mode from the SERVICE MENU. 3. Confirm the color change (yellow) from "TOO HIGH" to "TOO LOW" by CW TRANSF. and "SYNC : YES" being shown on the screen. Then, adjust CW TRANSF. until "BELOW REFERENCE" mark turns yellow and confirm again " SYNC : YES" being shown on the screen.
RF. AGC adjustment			No.22 RF AGC	1. Receive a broadcast. 2. Select "No.22 RF AGC" of the PICTURE MODE. 3. Press the MUTE key and turn off color. 4. With the MENU LEFT key, get noise in the screen picture. (0 side of setting value) 5. Press the MENU RIGHT key and stop when noise disappears from the screen. 6. Change to other channels and make sure that there is no irregularity. 7. Press the MUTE key and get color out.
FOCUS adjustment	Signal generator		FOCUS VR [In FBT]	1. Receive a crosshatch signal. 2. While looking at the screen, adjust FOCUS VR so that the vertical and horizontal lines will be clear and in fine detail. 3. Make sure that the picture is in focus even when the screen gets darkened.

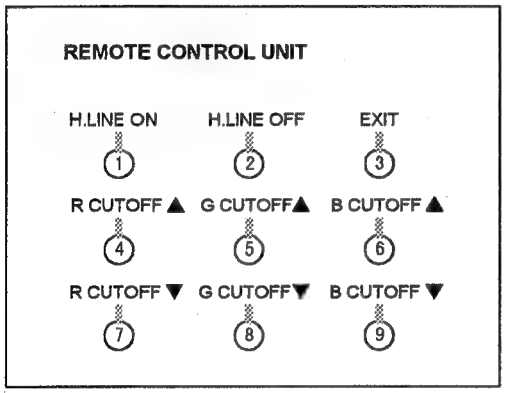


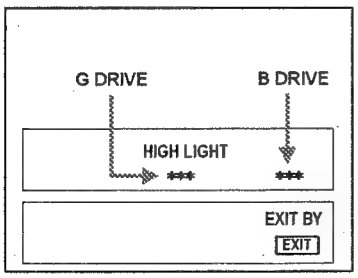
Item	Measuring instruments	Test point	Adjustment part	Description
V.SIZE Adjustment	**Signal generator**		**No.14 V.SIZE**	1. Receive a crosshatch signal. 2. Select No.14 V.SIZE in the PICTURE MODE. 3. Set the initial setting value of No.14 V.SIZE with the LEFT / RIGHT key of the MENU. 4. Adjust No.14 V.SIZE until the vertical screen size is 92%.
H.POSITION Adjustment	**Signal generator**		**No.16 H.POS**	1. Receive a crosshatch signal. 2. Select the No.16 H.POS of the PICTURE MODE. 3. Set the initial setting value of the No.16 H.POS with the LEFT / RIGHT key of the MENU. 4. Adjust the No.16 H.POS until the screen will be horizontally centered.



<table>
<tr><th>Item</th><th>Measuring instruments</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>WHITE BALANCE (Low Light) Adjustment</td><td>Signal generator</td><td></td><td>BRIGHT
R. CUTOFF
G. CUTOFF
B. CUTOFF
SCREEN VR
[In FBT]</td><td>1. Receive a monoscope pattern signal.
2. Select the【LOW LIGHT】MODE from the SERVICE MENU.
3. Set the initial setting value of BRIGHT with the LEFT / RIGHT key of the remote control unit.
4. Set the initial setting value of R CUTOFF, G CUTOFF and B CUTOFF with the ④ to ⑨ key of the remote control unit.
5. Display a horizontal line by pressing the ①key of the remote control unit.
6. Turn the screen VR all the way to the left.
7. Turn the screen VR gradually to the right from the left until either one of the red, blue or green colors appears slightly.
8. Adjust the two colors which did not appear until the a horizontal line that is displayed becomes white using the ④ to ⑨ keys of the remote control unit.
9. Turn the screen VR until the first horizontal line is displayed slightly.
10. Press the ② key to return to the regular screen.

* The ③ EXIT key is the cancel key for the WHITE BALANCE.</td></tr>
<tr><td colspan="4">[LOW LIGHT] MODE
 

 
</td></tr>
<tr><td>WHITE BALANCE (High Light) Adjustment</td><td>Signal generator</td><td></td><td>G. DRIVE
B. DRIVE</td><td>1. Receive a monoscope pattern signal.
2. Select the【HIGH LIGHT】MODE in the SERVICE MENU.
3. Set the initial setting value of G DRIVE and B DRIVE with the ⑤, ⑥, ⑧ and ⑨ keys of the remote control unit.
4. Adjust the screen until it becomes white using the ⑤, ⑥, ⑧ and ⑨ keys of the remote control unit.
* The ③ (EXIT) key is the cancel key for the WHITE BALANCE.

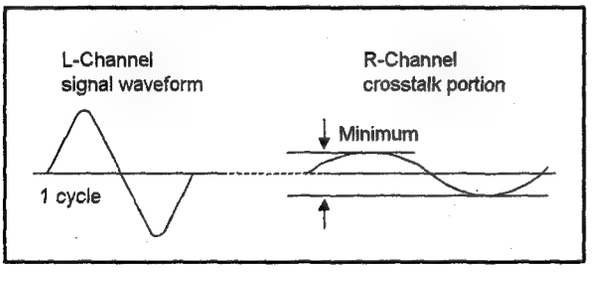
Remote Control Unit
① key : H.LINE ON
② key : H.LINE OFF
③ key : EXIT
⑤ key : G DRIVE ▲
⑥ key : B DRIVE ▲
⑧ key : G DRIVE ▼
⑨ key : B DRIVE ▼</td></tr>
<tr><td colspan="4">[HIGH LIGHT] MODE
 
</td></tr>
</table>

Item	Measuring instruments	Test point	Adjustment part	Description
SUB BRIGHT Adjustment			No.1 BRIGHT	1. Receive a broadcast. 2. Select No.1 BRIGHT of the PICTURE MODE. 3. Set the initial setting value of the No.1 BRIGHT with the LEFT / RIGHT key of the MENU. 4. If the brightness is not best with the initial setting value, make fine adjustment of the No.1 BRIGHT until you get the optimum brightness.
SUB CONT-RAST Adjustment			No.2 PICTURE	1. Receive a broadcast. 2. Select No.2 PICTURE of the PICTURE MODE. 3. Set the initial setting value of the No.2 PICTURE with the LEFT / RIGHT key of the MENU. 4. If the contrast is not best with the initial setting value, make fine adjustment of the No.2 PICTURE until you get the optimum contrast.
SUB COLOR Adjustment			No.7 COLOR	1. Receive a broadcast. 2. Select No.7 COLOR of the PICTURE MODE. 3. Set the initial setting value of the No.7 COLOR with the LEFT / RIGHT key of the MENU. 4. If the color is not best with the initial setting value, make fine adjustment of the No.7 COLOR until you get the optimum color.
SUB TINT Adjustment			No.6 TINT	1. Receive a broadcast. 2. Select No.6 TINT of the PICTURE MODE. 3. Set the initial setting value of the No.6 TINT with the LEFT / RIGHT key of the MENU. 4. If the tint is not best with the initial setting value, make fine adjustment of the No.6 TINT until you get the optimum tint.

ADJUSTMENT OF MTS CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
MTS INPUT LEVEL check			No.3 IN LEVEL	1. Select the "No.3 IN LEVEL" of the SOUND MODE. 2. Verify that the "No.3 IN LEVEL" is set at its initial setting value.
MTS STEREO VCO adjustment	Signal generator Frequency counter	【MPX】 Connector 【2】 pin RTV	No.4 FH MON. No.5 ST VCO	1. Receive a RF signal (nonmodulated sound signal) from the antenna terminal. 2. Select the "No.4 FH MON." of SOUND MODE, and change the setting value from 0 to 1. 3. Connect the Frequency Counter to pin 【2】 of 【MPX】 connector. 4. Select the "No.5 ST VCO". 5. Set the initial setting value of the "No.5 ST VCO" with the LEFT/RIGHT key of the menu. 6. Adjust the "No.5 ST VCO" so that the Frequency Counter will display 15.73kHz±0.1kHz. 7. Select the "No.4 FH MON." of the SOUND MODE, and reset the setting value from 1 to 0.

Item	Measuring instrument	Test point	Adjustment part	Description
MTS SAP VCO adjustment	**Signal generator** **Frequency counter**	**【MPX】 Connector** **【4】 pin SDA** **【3】 pin GND** **【2】 pin RTV**	**No.10 5FH MON.** **No.11 SAP VCO**	1. Receive a RF signal (non modulated sound signal) from the antenna terminal. 2. Connect between pin 【4】 of 【MPX】 connector and GND (Pin 【3】 of 【MPX】 connector) through 1MΩ Resistor. 3. Select the "No.10 5FH MON." of the SOUND MODE, and reset the setting value from 0 to 1. 4. Connect the Frequency Counter to pin 【2】 (R.OUT) of 【MPX】 connector. 5. Select the "No.11 SAP VCO". 6. Set the initial setting value of "No.11 SAP VCO" with the LEFT/RIGHT key of the menu. 7. Adjust the "No.11 SAP VCO" so that the Frequency Counter will display 78.67kHz±0.5kHz. 8. Select the "No.10 5FH MON." of the SOUND MODE, and reset the setting value from 1 to 0.
MTS FILTER check			**No.7 FILTER**	1. Select the "No.7 FILTER" of the SOUND MODE. 2. Verify that the "No.7 FILTER" is set at its initial setting value.
MTS SEPARATION adjustment	**TV audio multiplex signal generator** **Oscilloscope**	**【MPX】 Connector** **【1】 pin LTV** **【2】 pin RTV**	**No.8 LOW SEP.** **No.9 HI SEP.**	1. Input a stereo L signal (300Hz) from the TV audio multiplex signal generator to the antenna terminal. 2. Connect an oscilloscope to pin 【1】 (L OUT) of 【MPX】 connector, and display one cycle portion of the 300Hz signal. 3. Change the connection of the oscilloscope to pin 【2】 (R OUT) of 【MPX】 connector, and enlarge the voltage axis. 4. Select the "No.8 LOW SEP." of the SOUND MODE. 5. Set the initial setting value of the "No.8 LOW SEP." with the LEFT/RIGHT key of the menu. 6. Adjust the "No.8 LOW SEP." so that the stroke element of the 300Hz signal will become minimum. 7. Change the signal to 3kHz, and similarly adjust the "No.9 HI SEP.".



HOW TO CHECK THE HIGH VOLTAGE HOLD DOWN CIRCUIT

1. HIGH VOLTAGE HOLD DOWN CIRCUIT

After repairing the high voltage hold down circuit shown in Fig. 1.
This circuit shall be checked to operate correctly.

2. CHECKING OF THE HIGH VOLTAGE HOLD DOWN CIRCUIT

(1) Turn the POWER SW ON.

(2) As shown in Fig. 1, set the resistor (between [X] connector [1] & [3]).

(3) Make sure that the screen picture disappears.

(4) Temporarily unplug the power cord.

(5) Remove the resistor (between [X] connector [1] & [3]).

(6) Again plug the power cord, make sure that the normal picture is displayed on the screen.

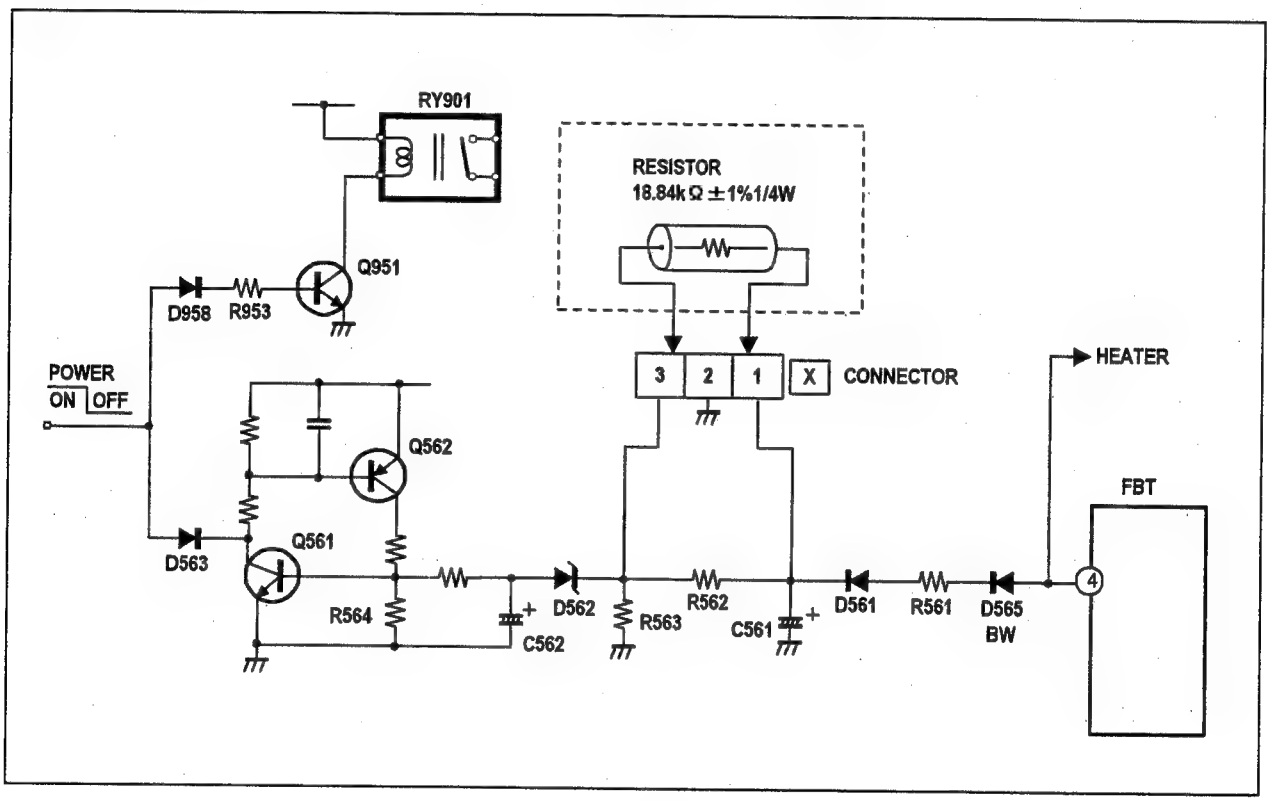


Fig. 1

SELF CHECK FUNCTIONS

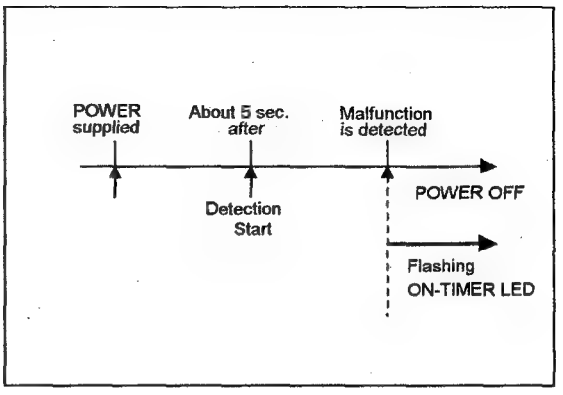
1. Outline

This model includes a CRT (Cathode Ray Tube) NECK protector function which cuts off the power in the event of a malfunction and informs of the malfunction by flashing ON-TIMER LED.

The malfunction is detected according to the state of the control line input connected to the main CPU.

2. Self check indicating function

The CRT NECK protector function begins detection about 5 seconds after power is supplied. In the event a malfunction is detected, the power is cutoff immediately. At this time, the ON-TIMER LED flashes.



[LED indication]

The ON-TIMER LED flashes at 0.5 second intervals.

3. Contents of Self check

Check item	Detected contents	Detection method	Abnormality state
CRT NECK protector (Also detected if the power supply line output from the HVT (High voltage Transformer) has shorted with the ground.)	When the vertical circuit S-correction capacitor C427 is shorted, detect the potential drop of the C427, and prevent the burn damage to the CRT NECK. (Grounding of shorting of the power supply output from the HVT to the vertical circuit, and the small signal power supply is also detected.)	The main CPU detects at 1 second intervals. If NG is detected for more than 1 ms, a malfunction is interpreted.	During an abnormality the power is cutoff. The remote controller power key operation is not recognized and power off is maintained until the power cord is unplugged and reinserted.

REPLACEMENT OF CHIP COMPONENT

■ CAUTIONS

1. Avoid heating for more than 3 seconds.
2. Do not rub the electrodes and the resist parts of the pattern.
3. When removing a chip part, melt the solder adequately.
4. Do not reuse a chip part after removing it.

■ SOLDERING IRON

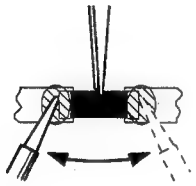
1. Use a high insulation soldering iron with a thin pointed end of it.
2. A 30w soldering iron is recommended for easily removing parts.

■ REPLACEMENT STEPS

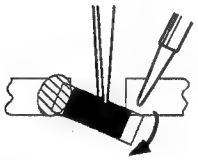
1. How to remove Chip parts

◆ **Resistors, capacitors, etc.**

(1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.



(2) Shift with tweezers and remove the chip part.



◆ **Transistors, diodes, variable resistors, etc.**

(1) Apply extra solder to each lead.

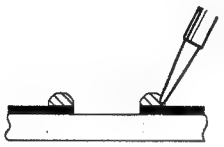
(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.

Note : After removing the part, remove remaining solder from the pattern.

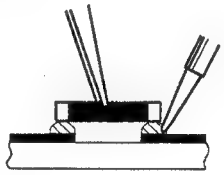
2. How to install Chip parts

◆ **Resistors, capacitors, etc.**

(1) Apply solder to the pattern as indicated in the figure.



(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

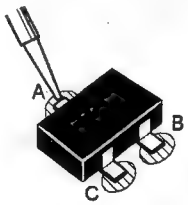


◆ **Transistors, diodes, variable resistors, etc.**

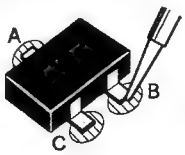
(1) Apply solder to the pattern as indicated in the figure.

(2) Grasp the chip part with tweezers and place it on the solder.

(3) First solder lead **A** as indicated in the figure.



(4) Then solder leads **B** and **C**.



PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety. Whenever replacing these parts, be sure to use specified ones to secure the safety .
- The parts not indicated in this Parts List and those which are filled with lines —— in the Parts No. columns will not be supplied.
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied.

ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% -0%

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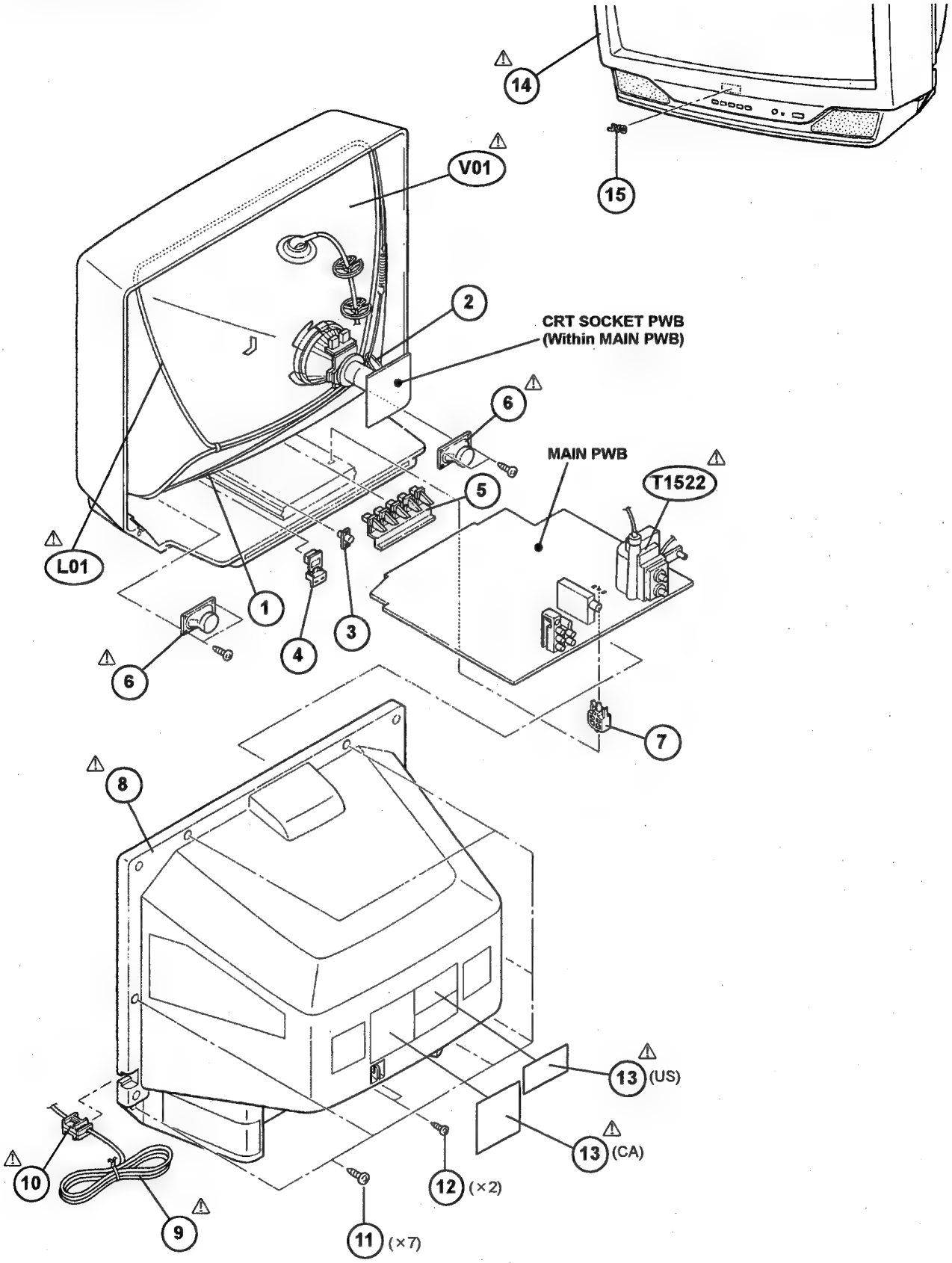
EXPLODED VIEW PARTS LIST

⚠	Ref. No.	Part No.	Part Name	Description	Local
⚠	V01	A68ADT25X01	ITC TUBE(C)	Inc. DY	*
⚠	L01	CE41329-00DJB	DEG COIL		*
⚠	T1522	QQH0028-001	F B T		*
	1	CHGB0015-0B	BRAIDED WIRE		*
	2	CHGB0016-0C	BRAIDED WIRE		*
	3	LC30191-001C-A	REMOCON LENS		*
	4	LC30376-001A-A	POWER KNOB		*
	5	LC30271-001A-A	PUSH KNOB		*
⚠	6	CEBSS09D-03KJ2	SPEAKER	(×2) SP01, SP02	*
	7	CM48144-001-A	PB STOPPER		*
⚠	8	LC10082-001D-A	REAR COVER		*
⚠	9	QMPD070-200-JC	POWER CORD	(CN10PW) Within MAIN PWB	*
⚠	10	LC20106-001B-A	POWER CORD CLAMP		*
	11	GBSF4016Z	TAPPING SCREW	(×7)	*
	12	SBSB3010Z	TAPPING SCREW	(×2)	*
⚠	13	CM23034-001-A	RATING LABEL	(US)	*
⚠	13	CM22999-001-A	RATING LABEL	(CA)	*
⚠	14	LC10081-001E-A	FRONT CABINET		*
	15	CM48006-A03-H	JVC MARK		*

EXPLODED VIEW



PRINTED WIRING BOARD PARTS LIST

MAIN P.W. BOARD ASS'Y (SFV-1006A-M2)

⚠ Symbol No.	Part No.	Part Name	Description	Local
RESISTOR				
R1001	QRE121J-5R6Y	C R	5.6Ω 1/2W J	*
R1003-04	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
R1005	QRG01GJ-121	OM R	120Ω 1W J	*
R1101	NRSA02J-820X	MG R	82Ω 1/10W J	*
R1102	NRSA02J-562X	MG R	5.6kΩ 1/10W J	*
R1103	NRSA02J-182X	MG R	1.8kΩ 1/10W J	*
R1104	QRE121J-101Y	C R	100Ω 1/2W J	*
R1105	NRSA02J-180X	MG R	18Ω 1/10W J	*
R1106	NRSA02J-270X	MG R	27Ω 1/10W J	*
R1131	NRSA02J-271X	MG R	270Ω 1/10W J	*
R1133	NRSA02J-101X	MG R	100Ω 1/10W J	*
R1134	NRSA02J-102X	MG R	1kΩ 1/10W J	*
R1135	NRSA02J-221X	MG R	220Ω 1/10W J	*
R1136	NRSA02J-122X	MG R	1.2kΩ 1/10W J	*
R1137	NRSA02J-152X	MG R	1.5kΩ 1/10W J	*
R1138	NRSA02J-821X	MG R	820Ω 1/10W J	*
R1139	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
R1142	NRSA02J-101X	MG R	100Ω 1/10W J	*
R1145	NRSA02J-472X	MG R	4.7kΩ 1/10W J	*
R1161-62	NRSA02J-102X	MG R	1kΩ 1/10W J	*
R1163	NRSA02J-472X	MG R	4.7kΩ 1/10W J	*
R1164	NRSA02J-332X	MG R	3.3kΩ 1/10W J	*
R1165	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
R1201	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
R1203	NRSA02J-102X	MG R	1kΩ 1/10W J	*
R1204	NRSA02J-681X	MG R	680Ω 1/10W J	*
R1205	NRSA02J-152X	MG R	1.5kΩ 1/10W J	*
R1209	NRSA02J-471X	MG R	470Ω 1/10W J	*
R1210	NRSA02J-392X	MG R	3.9kΩ 1/10W J	*
R1211	NRSA02J-471X	MG R	470Ω 1/10W J	*
R1212	NRSA02J-103X	MG R	10kΩ 1/10W J	*
R1213	NRSA02J-391X	MG R	390Ω 1/10W J	*
R1215	NRSA02J-334X	MG R	330kΩ 1/10W J	*
R1216	NRSA02J-563X	MG R	56kΩ 1/10W J	*
R1218	NRSA02J-182X	MG R	1.8kΩ 1/10W J	*
R1219	NRSA02J-122X	MG R	1.2kΩ 1/10W J	*
R1220	NRSA02J-561X	MG R	560Ω 1/10W J	*
R1222	NRSA02J-102X	MG R	1kΩ 1/10W J	*
R1251	NRSA02J-750X	MG R	75Ω 1/10W J	*
R1254	NRSA02J-750X	MG R	75Ω 1/10W J	*
R1256	NRSA02J-750X	MG R	75Ω 1/10W J	*
R1264	NRSA02J-222X	MG R	2.2kΩ 1/10W J	*
R1265	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
R1266	NRSA02J-152X	MG R	1.5kΩ 1/10W J	*
R1267	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
R1271	NRSA02J-821X	MG R	820Ω 1/10W J	*
R1272	NRSA02J-102X	MG R	1kΩ 1/10W J	*
R1273	NRSA02J-821X	MG R	820Ω 1/10W J	*
R1274	NRSA02J-562X	MG R	5.6kΩ 1/10W J	*
R1275	NRSA02J-223X	MG R	22kΩ 1/10W J	*
R1276	NRSA02J-562X	MG R	5.6kΩ 1/10W J	*
R1277	NRSA02J-272X	MG R	2.7kΩ 1/10W J	*
R1278	NRSA02J-152X	MG R	1.5kΩ 1/10W J	*
R1298-99	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
R1305	NRSA02J-393X	MG R	39kΩ 1/10W J	*
R1306	NRSA02J-183X	MG R	18kΩ 1/10W J	*
R1351	NRSA02J-102X	MG R	1kΩ 1/10W J	*
R1352	NRSA02J-332X	MG R	3.3kΩ 1/10W J	*
R1353	NRSA02J-333X	MG R	33kΩ 1/10W J	*
R1354	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
R1361	NRSA02J-152X	MG R	1.5kΩ 1/10W J	*
R1362	NRSA02J-183X	MG R	18kΩ 1/10W J	*
R1363	NRSA02J-103X	MG R	10kΩ 1/10W J	*
R1365	NRSA02J-152X	MG R	1.5kΩ 1/10W J	*
R1371-73	NRSA02J-151X	MG R	150Ω 1/10W J	*
R1374-76	NRSA02J-331X	MG R	330Ω 1/10W J	*

⚠ Symbol No.	Part No.	Part Name	Description			Local
RESISTOR						
R1377-79	NRSA02J-101X	MG R	100Ω	1/10W	J	*
R1380-82	QRZ0111-152	C R	1.5kΩ	1/2W	J	*
R1383-85	QRL029J-123	OM R	12kΩ	2W	J	*
R1386-88	NRSA02J-272X	MG R	2.7kΩ	1/10W	J	*
R1421	NRSA02J-472X	MG R	4.7kΩ	1/10W	J	*
R1422	QRE121J-561Y	C R	560Ω	1/2W	J	*
R1423	QRX01GJ-1R0	MF R	1.0Ω	1W	J	*
R1424	QRE121J-102Y	C R	1kΩ	1/2W	J	*
R1425	NRSA02J-683X	MG R	68kΩ	1/10W	J	*
R1427	NRSA02J-392X	MG R	3.9kΩ	1/10W	J	*
R1428	NRSA02J-393X	MG R	39kΩ	1/10W	J	*
R1429	NRSA02J-223X	MG R	22kΩ	1/10W	J	*
R1430-31	NRSA02J-0R0X	MG R	0.0Ω	1/10W	J	*
R1433	QRE121J-100Y	C R	10Ω	1/2W	J	*
R1441	QRE121J-102Y	C R	1kΩ	1/2W	J	*
R1501	NRSA02J-361X	MG R	360Ω	1/10W	J	*
R1502	NRSA02J-152X	MG R	1.5kΩ	1/10W	J	*
R1504	NRSA02J-0R0X	MG R	0.0Ω	1/10W	J	*
R1505	NRSA02J-822X	MG R	8.2kΩ	1/10W	J	*
R1506	NRSA02J-222X	MG R	2.2kΩ	1/10W	J	*
R1507	NRSA02J-563X	MG R	56kΩ	1/10W	J	*
R1511	QRE121J-391Y	C R	390Ω	1/2W	J	*
R1522	NRSA02J-391X	MG R	390Ω	1/10W	J	*
R1523	NRSA02J-471X	MG R	470Ω	1/10W	J	*
R1524	QRE121J-271Y	C R	270Ω	1/2W	J	*
R1525	QRG01GJ-220	OM R	22Ω	1W	J	*
R1526	QRL039J-152	OM R	1.5kΩ	3W	J	*
R1530	QRE121J-681Y	C R	680Ω	1/2W	J	*
R1541	QRT029J-1R8	MF R	1.8Ω	2W	J	*
R1542	QRL029J-101	OM R	100Ω	2W	J	*
R1543	QRT039J-1R0	MF R	1.0Ω	3W	J	*
R1544	QRT039J-1R0	MF R	1.0Ω	3W	J	*
R1546	QRL029J-220	OM R	22Ω	2W	J	*
R1561	QRK126J-4R7X	C R	4.7Ω	1/2W	J	*
⚠ R1562	NRZ0032-7151X	CHIP MF R	7.15kΩ	1/10W	J	
⚠ R1563	NRZ0032-2941X	CHIP MF R	2.94kΩ	1/10W	J	
R1564	NRSA02J-153X	MG R	15kΩ	1/10W	J	*
R1565	NRSA02J-0R0X	MG R	0.0Ω	1/10W	J	*
R1566	NRSA02J-333X	MG R	33kΩ	1/10W	J	*
R1567	NRSA02J-392X	MG R	3.9kΩ	1/10W	J	*
R1568	NRSA02J-223X	MG R	22kΩ	1/10W	J	*
R1571	QRX01GJ-1R5	MF R	1.5Ω	1W	J	*
R1581	QRJ146J-2R2X	C R	2.2Ω	1/4W	J	*
R1582	QRL029J-223	OM R	22kΩ	2W	J	*
R1583	QRE121J-333Y	C R	33kΩ	1/2W	J	*
R1584	QRE121J-563Y	C R	56kΩ	1/2W	J	*
R1585	QRE121J-103Y	C R	10kΩ	1/2W	J	*
R1586	QRE121J-472Y	C R	4.7kΩ	1/2W	J	*
R1615-16	NRSA02J-123X	MG R	12kΩ	1/10W	J	*
R1617	NRSA02J-332X	MG R	3.3kΩ	1/10W	J	*
R1618	NRSA02J-332X	MG R	3.3kΩ	1/10W	J	*
R1619-20	NRSA02J-391X	MG R	390Ω	1/10W	J	*
R1621-22	QRE121J-4R7Y	C R	4.7Ω	1/2W	J	*
R1623	NRSA02J-153X	MG R	15kΩ	1/10W	J	*
R1625	NRSA02J-333X	MG R	33kΩ	1/10W	J	*
R1627	NRSA02J-101X	MG R	100Ω	1/10W	J	*
R1651	NRSA02J-102X	MG R	1kΩ	1/10W	J	*
R1652-53	NRSA02J-682X	MG R	6.8kΩ	1/10W	J	*
R1654	NRSA02J-333X	MG R	33kΩ	1/10W	J	*
R1655	NRSA02J-332X	MG R	3.3kΩ	1/10W	J	*
R1656	NRVA02D-152X	MF R	1.5kΩ	1/10W	D	*
R1658	NRVA02D-153X	MF R	15kΩ	1/10W	D	*
R1660	NRSA02J-512X	MG R	5.1kΩ	1/10W	J	*
R1661	NRSA02J-473X	MG R	47kΩ	1/10W	J	*
R1662-65	NRSA02J-123X	MG R	12kΩ	1/10W	J	*
R1666-67	NRSA02J-562X	MG R	5.6kΩ	1/10W	J	*
R1668	NRSA02J-473X	MG R	47kΩ	1/10W	J	*
R1669-70	NRSA02J-471X	MG R	470Ω	1/10W	J	*
R1671-72	NRSA02J-102X	MG R	1kΩ	1/10W	J	*
R1673-74	NRSA02J-823X	MG R	82kΩ	1/10W	J	*

⚠	Symbol No.	Part No.	Part Name	Description			Local
	RESISTOR						
	R1675-76	NRSA02J-181X	MG R	180Ω	1/10W	J	*
	R1677	NRSA02J-0R0X	MG R	0.0Ω	1/10W	J	*
	R1678-81	NRSA02J-223X	MG R	22kΩ	1/10W	J	*
	R1682	NRSA02J-683X	MG R	68kΩ	1/10W	J	*
	R1683-84	NRSA02J-561X	MG R	560Ω	1/10W	J	*
	R1691	NRSA02J-563X	MG R	56kΩ	1/10W	J	*
	R1701	NRSA02J-563X	MG R	56kΩ	1/10W	J	*
	R1702-04	NRSA02J-103X	MG R	10kΩ	1/10W	J	*
	R1705	NRSA02J-823X	MG R	82kΩ	1/10W	J	*
	R1706	NRSA02J-103X	MG R	10kΩ	1/10W	J	*
	R1707	NRSA02J-0R0X	MG R	0.0Ω	1/10W	J	*
	R1708-09	NRSA02J-103X	MG R	10kΩ	1/10W	J	*
	R1710	NRSA02J-102X	MG R	1kΩ	1/10W	J	*
	R1712	NRSA02J-0R0X	MG R	0.0Ω	1/10W	J	*
	R1713	NRSA02J-102X	MG R	1kΩ	1/10W	J	*
	R1714	NRSA02J-471X	MG R	470Ω	1/10W	J	*
	R1715	NRSA02J-105X	MG R	1MΩ	1/10W	J	*
	R1716	NRSA02J-154X	MG R	150kΩ	1/10W	J	*
	R1717	NRSA02J-563X	MG R	56kΩ	1/10W	J	*
	R1719	NRSA02J-102X	MG R	1kΩ	1/10W	J	*
	R1721	NRSA02J-0R0X	MG R	0.0Ω	1/10W	J	*
	R1722	NRSA02J-0R0X	MG R	0.0Ω	1/10W	J	*
	R1723	NRSA02J-105X	MG R	1MΩ	1/10W	J	*
	R1724	NRSA02J-102X	MG R	1kΩ	1/10W	J	*
	R1725	NRSA02J-103X	MG R	10kΩ	1/10W	J	*
	R1726	NRSA02J-392X	MG R	3.9kΩ	1/10W	J	*
	R1727	NRSA02J-103X	MG R	10kΩ	1/10W	J	*
	R1728	NRSA02J-392X	MG R	3.9kΩ	1/10W	J	*
	R1729	NRSA02J-153X	MG R	15kΩ	1/10W	J	*
	R1730	NRSA02J-682X	MG R	6.8kΩ	1/10W	J	*
	R1732	NRSA02J-102X	MG R	1kΩ	1/10W	J	*
	R1733	NRSA02J-103X	MG R	10kΩ	1/10W	J	*
	R1734	NRSA02J-182X	MG R	1.8kΩ	1/10W	J	*
	R1735	NRSA02J-102X	MG R	1kΩ	1/10W	J	*
	R1736	NRSA02J-332X	MG R	3.3kΩ	1/10W	J	*
	R1737	NRSA02J-472X	MG R	4.7kΩ	1/10W	J	*
	R1738	NRSA02J-152X	MG R	1.5kΩ	1/10W	J	*
	R1739	NRSA02J-472X	MG R	4.7kΩ	1/10W	J	*
	R1740	NRSA02J-152X	MG R	1.5kΩ	1/10W	J	*
	R1741	NRSA02J-472X	MG R	4.7kΩ	1/10W	J	*
	R1742	NRSA02J-152X	MG R	1.5kΩ	1/10W	J	*
	R1743-44	NRSA02J-0R0X	MG R	0.0Ω	1/10W	J	*
	R1745-46	NRSA02J-561X	MG R	560Ω	1/10W	J	*
	R1747	NRSA02J-0R0X	MG R	0.0Ω	1/10W	J	*
	R1751	NRSA02J-103X	MG R	10kΩ	1/10W	J	*
	R1752	NRSA02J-472X	MG R	4.7kΩ	1/10W	J	*
	R1753	NRSA02J-153X	MG R	15kΩ	1/10W	J	*
	R1754	NRSA02J-103X	MG R	10kΩ	1/10W	J	*
	R1755	NRSA02J-472X	MG R	4.7kΩ	1/10W	J	*
	R1756	NRSA02J-153X	MG R	15kΩ	1/10W	J	*
	R1757	NRSA02J-122X	MG R	1.2kΩ	1/10W	J	*
	R1758	NRSA02J-681X	MG R	680Ω	1/10W	J	*
	R1759	NRSA02J-0R0X	MG R	0.0Ω	1/10W	J	*
	R1765-66	NRSA02J-0R0X	MG R	0.0Ω	1/10W	J	*
	R1767	NRSA02J-474X	MG R	470kΩ	1/10W	J	*
	R1768	NRSA02J-473X	MG R	47kΩ	1/10W	J	*
	R1769	NRSA02J-102X	MG R	1kΩ	1/10W	J	*
	R1771	NRSA02J-0R0X	MG R	0.0Ω	1/10W	J	*
	R1804-06	NRSA02J-101X	MG R	100Ω	1/10W	J	*
⚠	R1901	QRF074K-1R2	UNF R	1.2Ω	7W	K	*
⚠	R1921	QRX029J-2R7	MF R	2.7 Ω	2W	J	*
	R1923	QRJ149J-470	C R	47Ω	1/4W	J	*
	R1924	QRN141J-334Y	C R	330kΩ	1/4W	J	*
	R1925	QRN141J-123Y	C R	12kΩ	1/4W	J	*
⚠	R1926	QRF154J-271	UNF R	270 Ω	15W	J	*
⚠	R1927	QRF154J-271	UNF R	270 Ω	15W	J	*
	R1952	NRSA02J-222X	MG R	2.2kΩ	1/10W	J	*
	R1953	NRSA02J-122X	MG R	1.2kΩ	1/10W	J	*
	R1954	QRE121J-102Y	C R	1kΩ	1/2W	J	*
	R1955	NRSA02J-223X	MG R	22kΩ	1/10W	J	*

⚠	Symbol No.	Part No.	Part Name	Description			Local
	RESISTOR						
	R1956	QRE121J-101Y	C R	100Ω	1/2W	J	*
	R1957	NRSA02J-222X	MG R	2.2kΩ	1/10W	J	*
	R1958	NRSA02J-103X	MG R	10kΩ	1/10W	J	*
⚠	R1981	QRZ9041-275	C R	2.7MΩ	1/2W	K	*
	CAPACITOR						
	C1001	QETN1HM-106Z	E CAP.	10μF	50V	M	*
	C1003	QETN1AM-477Z	E CAP.	470μF	10V	M	*
	C1004	QETN1HM-106Z	E CAP.	10μF	50V	M	*
	C1005	NCB21HK-103X	C CAP.	0.01μF	50V	K	*
	C1006	QETN1CM-476Z	E CAP.	47μF	16V	M	*
	C1011-12	NCB21HK-102X	C CAP.	1000pF	50V	K	*
	C1013	NRSA02J-223X	MG R	22kΩ	1/10W	J	*
	C1101-04	NCB21HK-103X	C CAP.	0.01μF	50V	K	*
	C1105	QETN1CM-107Z	E CAP.	100μF	16V	M	*
	C1106	NCB21HK-103X	C CAP.	0.01μF	50V	K	*
	C1107	NRSA02J-0R0X	MG R	0.0Ω	1/10W	J	*
	C1108	NDC21HJ-680X	C CAP.	68pF	50V	J	*
	C1131	QFV71HJ-154Z	MF CAP.	0.15μF	50V	J	*
	C1132	NCB21HK-152X	C CAP.	1500pF	50V	K	*
	C1133	QETN1HM-474Z	E CAP.	0.47μF	50V	M	*
	C1134	NCB21HK-102X	C CAP.	1000pF	50V	K	*
	C1135	NCB21HK-103X	C CAP.	0.01μF	50V	K	*
	C1138	QETN1CM-476Z	E CAP.	47μF	16V	M	*
	C1161	QETN1CM-107Z	E CAP.	100μF	16V	M	*
	C1162	NCB21HK-103X	C CAP.	0.01μF	50V	K	*
	C1163-64	NDC21HJ-470X	C CAP.	47pF	50V	J	*
	C1166	NCB21HK-103X	C CAP.	0.01μF	50V	K	*
	C1167	NDC21HJ-470X	C CAP.	47pF	50V	J	*
	C1169-70	NCB21HK-103X	C CAP.	0.01μF	50V	K	*
	C1205	NDC21HJ-680X	C CAP.	68pF	50V	J	*
	C1207	QETN1HM-474Z	E CAP.	0.47μF	50V	M	*
	C1208	QETN1HM-106Z	E CAP.	10μF	50V	M	*
	C1209-10	QETN1HM-105Z	E CAP.	1μF	50V	M	*
	C1211	NDC21HJ-681X	C CAP.	680pF	50V	J	*
	C1212	NCB21HK-104X	CHIP CAP.	0.1μF	50V	K	*
	C1214	QETN1HM-106Z	E CAP.	10μF	50V	M	*
	C1215	QETN1HM-105Z	E CAP.	1μF	50V	M	*
	C1217	QETN1CM-476Z	E CAP.	47μF	16V	M	*
	C1252	QETN1HM-106Z	E CAP.	10μF	50V	M	*
	C1253	QETN1HM-105Z	E CAP.	1μF	50V	M	*
	C1254-55	QETN1HM-106Z	E CAP.	10μF	50V	M	*
	C1256	QETN1CM-107Z	E CAP.	100μF	16V	M	*
	C1272	NDC21HJ-330X	C CAP.	33pF	50V	J	*
	C1276	QETN1HM-106Z	E CAP.	10μF	50V	M	*
	C1303	NCB21HK-103X	C CAP.	0.01μF	50V	K	*
	C1304	QETN1CM-107Z	E CAP.	100μF	16V	M	*
	C1305	NDC21HJ-100X	C CAP.	10pF	50V	J	*
	C1306	NCB21HK-223X	C CAP.	0.022μF	50V	K	*
	C1307	QETN1HM-474Z	E CAP.	0.47μF	50V	M	*
	C1309	NDC21HJ-2R0X	C CAP.	2.0pF	50V	J	*
	C1353	NDC21HJ-121X	C CAP.	120pF	50V	J	*
	C1374-75	NCS21HJ-271X	C CAP.	270pF	50V	J	*
	C1376	NCS21HJ-331X	C CAP.	330pF	50V	J	*
	C1377	QETN1CM-107Z	E CAP.	100μF	16V	M	*
	C1391	QETM2EM-226	E CAP.	22μF	250V	M	*
⚠	C1392	QCZ0121-102	C CAP.	1000pF	3kV	Z	*
	C1401	QETN1HM-225Z	E CAP.	2.2μF	50V	M	*
	C1402	QBHC1CK-225Z	TAN. CAP.	2.2μF	16V	K	
	C1403	NCB21HK-102X	C CAP.	1000pF	50V	K	*
	C1421	NCB21HK-472X	C CAP.	4700pF	50V	K	*
	C1424	QETN1VM-107Z	E CAP.	100μF	35V	M	*
	C1425	QETN1VM-477Z	E CAP.	470μF	35V	M	*
	C1426	QFLC2AK-473Z	M CAP.	0.047μF	100V	K	*
	C1427	QETM1EM-228	E CAP.	2200μF	25V	M	*
	C1428	QFV21HJ-474Z	MF CAP.	0.47μF	50V	J	*
	C1429	QFV21HJ-224Z	MF CAP.	0.22μF	50V	J	*
	C1501	QETN1CM-107Z	E CAP.	100μF	16V	M	*
	C1502	QETN1HM-106Z	E CAP.	10μF	50V	M	*
	C1503	NCB21HK-103X	C CAP.	0.01μF	50V	K	*

⚠	Symbol No.	Part No.	Part Name	Description			Local
	CAPACITOR						
	C1505	QETN1HM-106Z	E CAP.	10μF	50V	M	*
	C1511	QETN1CM-476Z	E CAP.	47μF	16V	M	*
	C1521	NCB21HK-332X	C CAP.	3300pF	50V	K	*
	C1522	NCB21HK-822X	C CAP.	8200pF	50V	K	*
	C1523	QEM61HK-105Z	E CAP.	1μF	50V	K	
⚠	C1524	QFZ0117-1252	MPP CAP.	12500pF	1.4kVH	±2.5%	
⚠	C1525	QEZ0203-107	E CAP.	100μF	160V	M	*
⚠	C1526	QFZ0119-434	MPP CAP.	0.43μF	200V	±3%	*
	C1527	QCS32HJ-561	C CAP.	560pF	500V	J	*
	C1543	QETN1VM-477Z	E CAP.	470μF	35V	M	*
	C1545	QETN1CM-227Z	E CAP.	220μF	16V	M	*
	C1546	QETN1CM-477Z	E CAP.	470μF	16V	M	*
	C1548	QETN1CM-227Z	E CAP.	220μF	16V	M	*
⚠	C1561	QETN1HM-106Z	E CAP.	10μF	50V	M	*
	C1562	QETN1HM-475Z	E CAP.	4.7μF	50V	M	*
	C1563	NCB21HK-103X	C CAP.	0.01μF	50V	K	*
⚠	C1581	QETC2EM-106Z	E CAP.	10μF	250V	M	*
	C1582	NCB21HK-473X	C CAP.	0.047μF	50V	K	*
	C1583	QETN1HM-225Z	E CAP.	2.2μF	50V	M	*
	C1584	QFLC2AJ-104Z	M CAP.	0.1μF	100V	J	*
	C1614	QETN1EM-108Z	E CAP.	1000μF	25V	M	*
	C1615	NRSA02J-0R0X	MG R	0.0Ω	1/10W	J	*
	C1616	QENC1HM-474Z	BP E CAP.	0.47μF	50V	M	*
	C1617	QETN1CM-476Z	E CAP.	47μF	16V	M	*
	C1618	QETN1CM-107Z	E CAP.	100μF	16V	M	*
	C1619	QETN1CM-477Z	E CAP.	470μF	16V	M	*
	C1620	NCB21HK-104X	CHIP CAP.	0.1μF	50V	K	*
	C1621	NRSA02J-0R0X	MG R	0.0Ω	1/10W	J	*
	C1622	QENC1HM-474Z	BP E CAP.	0.47μF	50V	M	*
	C1623	QETN1CM-476Z	E CAP.	47μF	16V	M	*
	C1624	QETN1CM-107Z	E CAP.	100μF	16V	M	*
	C1625	QETN1CM-477Z	E CAP.	470μF	16V	M	*
	C1626	NCB21HK-104X	CHIP CAP.	0.1μF	50V	K	*
	C1627	QETN1CM-477Z	E CAP.	470μF	16V	M	*
	C1651	NCB21HK-103X	C CAP.	0.01μF	50V	K	*
	C1652	QETN1CM-107Z	E CAP.	100μF	16V	M	*
	C1653	QETN1CM-476Z	E CAP.	47μF	16V	M	*
	C1654	NCB21HK-104X	CHIP CAP.	0.1μF	50V	K	*
	C1655	QENC1HM-475Z	BP E CAP.	4.7μF	50V	M	*
	C1656	QENC1HM-105Z	BP E CAP.	1μF	50V	M	*
	C1657	QETN1HM-225Z	E CAP.	2.2μF	50V	M	*
	C1658	NCB21HK-473X	C CAP.	0.047μF	50V	K	*
	C1659	QETN1HM-474Z	E CAP.	0.47μF	50V	M	*
	C1660-61	NCB21HK-104X	CHIP CAP.	0.1μF	50V	K	*
	C1662	QBTC1CK-335Z	TAN. CAP.	3.3μF	16V	K	
	C1663	QETN1HM-105Z	E CAP.	1μF	50V	M	*
	C1664	QBTC1CK-106Z	TAN. CAP.	10μF	16V	K	
	C1665-66	QETN1HM-105Z	E CAP.	1μF	50V	M	*
	C1667	QETN1HM-336Z	E CAP.	33μF	50V	M	*
	C1668	QETN1HM-105Z	E CAP.	1μF	50V	M	*
	C1669-70	QENC1HM-105Z	BP E CAP.	1μF	50V	M	*
	C1671	QETN1HM-225Z	E CAP.	2.2μF	50V	M	*
	C1672	NCB21HK-222X	C CAP.	2200pF	50V	K	*
	C1673	NCB21HK-104X	CHIP CAP.	0.1μF	50V	K	*
	C1674	QETN1HM-225Z	E CAP.	2.2μF	50V	M	*
	C1675	NCB21HK-222X	C CAP.	2200pF	50V	K	*
	C1676	NCB21HK-104X	CHIP CAP.	0.1μF	50V	K	*
	C1679	QETN1HM-105Z	E CAP.	1μF	50V	M	*
	C1680	QETN1CM-476Z	E CAP.	47μF	16V	M	*
	C1682-83	QETN1HM-474Z	E CAP.	0.47μF	50V	M	*
	C1685-86	QETN1HM-106Z	E CAP.	10μF	50V	M	*
	C1687-88	NCB21HK-472X	C CAP.	4700pF	50V	K	*
	C1701	NDC21HJ-560X	C CAP.	56pF	50V	J	*
	C1703	NCB21HK-102X	C CAP.	1000pF	50V	K	*
	C1704	NCB21HK-103X	C CAP.	0.01μF	50V	K	*
	C1705	NDC21HJ-151X	C CAP.	150pF	50V	J	*
	C1706	NCB21HK-104X	CHIP CAP.	0.1μF	50V	K	*
	C1707	QETN1HM-105Z	E CAP.	1μF	50V	M	*
	C1708	NCS21HJ-221X	C CAP.	220pF	50V	J	*
	C1709	NCS21HJ-102X	C CAP.	1000pF	50V	J	*

⚠	Symbol No.	Part No.	Part Name	Description			Local
	CAPACITOR						
	C1710	NDC21HJ-681X	C CAP.	680pF	50V	J	*
	C1711	QETN1HM-474Z	E CAP.	0.47μF	50V	M	*
	C1712	NCB21HK-102X	C CAP.	1000pF	50V	K	*
	C1714	NCB21HK-103X	C CAP.	0.01μF	50V	K	*
	C1716	QETN1CM-476Z	E CAP.	47μF	16V	M	*
	C1717	NCB21HK-104X	CHIP CAP.	0.1μF	50V	K	*
	C1718	NCB21HK-103X	C CAP.	0.01μF	50V	K	*
	C1719-20	QETN1CM-107Z	E CAP.	100μF	16V	M	*
	C1721	NCB21HK-104X	CHIP CAP.	0.1μF	50V	K	*
	C1722-23	NDC21HJ-5R0X	C CAP.	5.0pF	50V	J	*
	C1724	NCB21HK-103X	C CAP.	0.01μF	50V	K	*
	C1725	QETN1AM-227Z	E CAP.	220μF	10V	M	*
	C1726	NDC21HJ-470X	C CAP.	47pF	50V	J	*
	C1735	NCB21HK-103X	C CAP.	0.01μF	50V	K	*
	C1751	QETN1CM-476Z	E CAP.	47μF	16V	M	*
	C1801-03	QENC1HM-474Z	BP E CAP.	0.47μF	50V	M	*
⚠	C1901	QFZ9040-104	MF CAP.	0.1μFAC275V		M	*
⚠	C1902	QFZ9040-473	MF CAP.	0.047μFAC275V		M	*
⚠	C1911	QCZ9074-472	C CAP.	4700pFAC125V		Z	*
⚠	C1912	QCZ9074-472	C CAP.	4700pFAC125V		Z	*
⚠	C1913	QCZ9074-472	C CAP.	4700pFAC125V		Z	*
⚠	C1914	QEZ0429-477	E CAP.	470μF	200V	M	*
	C1921	QEHR2CM-335Z	E CAP.	3.3μF	160V	M	
	C1922	QEHB2CM-336	E CAP.	33μF	160V	M	
	C1951	QETN1EM-227Z	E CAP.	220μF	25V	M	*
	C1953	QETN1EM-107Z	E CAP.	100μF	25V	M	*
	C1954	NCB21HK-473X	C CAP.	0.047μF	50V	K	*
	C1956	QETN1HM-106Z	E CAP.	10μF	50V	M	*
	C1958	QETC1EM-107Z	E CAP.	100μF	25V	M	*
	C1959	QETN1HM-226Z	E CAP.	22μF	50V	M	*
⚠	C1981	QCZ9074-103	C CAP.	0.01μFAC125V		Z	*
⚠	C1982	QCZ9074-103	C CAP.	0.01μFAC125V		Z	*
	TRANSFORMER						
	T1131	CELT001-209J3	C.WAVE TRANSF.				*
	T1161	CELT003-109J3	S.I.F.TRANSF.				*
⚠	T1521	CE41106-00CJ1	DRIVE TRANSF.				*
⚠	T1522	QQH0028-001	F B T				*
⚠	T1901	QQT0198-001	POWER TRANSF				*
	COIL						
	L1001	QQL03BJ-150Z	COIL	15μH	J		*
	L1003	QQL03BJ-5R6Z	COIL	5.6μH	J		*
	L1102	QQLZ014-R22	COIL	0.22μH	J		*
	L1104	QQL03BJ-680Z	COIL	68μH	J		*
	L1131	QQL03BJ-220Z	COIL	22μH	J		*
	L1161	QQL03BJ-680Z	COIL	68μH	J		*
	L1162	QQL03BJ-390Z	COIL	39μH	J		*
	L1201	QQL03BJ-150Z	COIL	15μH	J		*
	L1271	QQL03BJ-560Z	COIL	56μH	J		*
	L1351	QQL03BJ-270Z	COIL	27μH	J		*
	L1391	QQL03BJ-390Z	COIL	39μH	J		*
	L1521	CELL009-003	COIL				*
	L1701	QQL03BJ-4R7Z	COIL	4.7μH	J		*
	L1709	QQL03BJ-100Z	COIL	10μH	J		*
	DIODE						
	D1001	MTZJ33B-T2	ZENER DIODE				*
	D1002	MTZJ5.1B-T2	ZENER DIODE				*
	D1003-04	MTZJ9.1C-T2	ZENER DIODE				*
	D1201-03	1SS133-T2	SI.DIODE				*
	D1252-54	MTZJ9.1C-T2	ZENER DIODE				*
	D1421	1N4003-T2	SI.DIODE				*
	D1422	MTZJ75-T2	ZENER DIODE				*
	D1423	1SS133-T2	SI.DIODE				*
	D1501	MTZJ9.1C-T2	ZENER DIODE				*
	D1511	MTZJ3.3A-T2	ZENER DIODE				*
	D1541	RGP10J-5025-T3	SI.DIODE				*
	D1542	1SR35-400A-T2	SI.DIODE				
	D1543-44	RGP10J-5025-T3	SI.DIODE				*
	D1561	1SS81-T2	SI.DIODE				*
⚠	D1562	MA4068N/Z1/-T2	ZENER DIODE				
	D1563	1SS133-T2	SI.DIODE				*

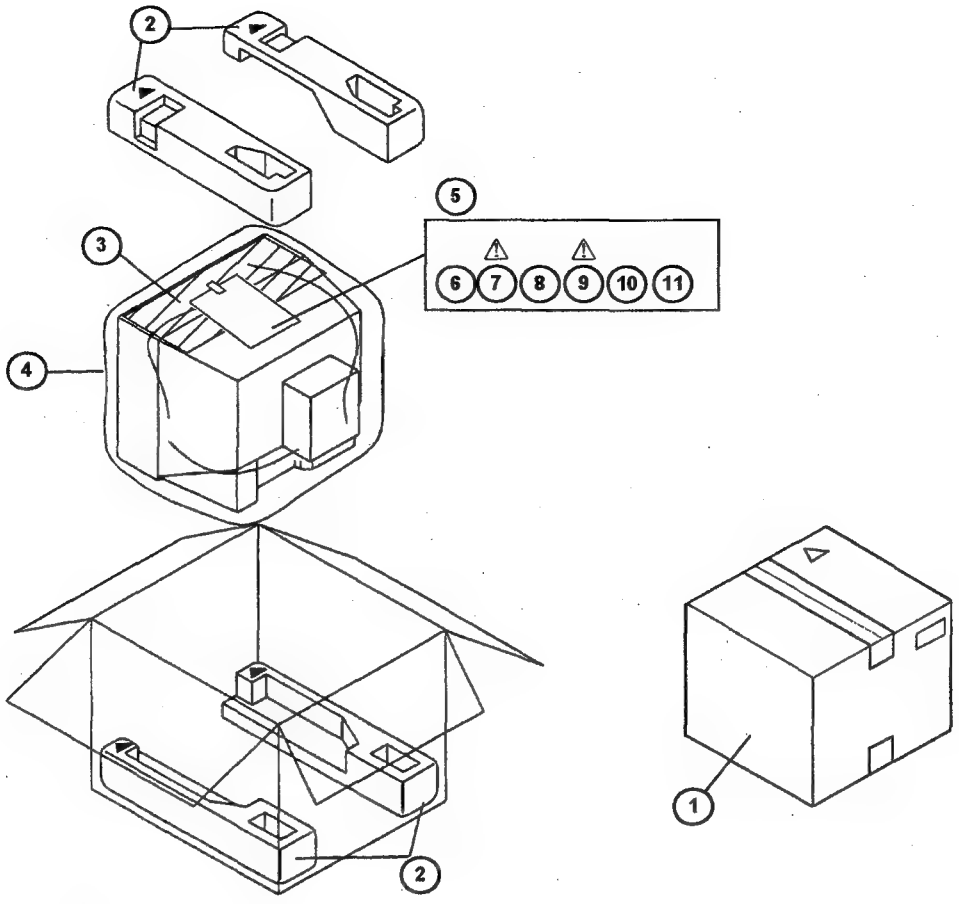
⚠	Symbol No.	Part No.	Part Name	Description	Local
	DIODE				
⚠	D1581	RH1S-T3	SI.DIODE		*
	D1582	RGP10J-5025-T3	SI.DIODE		*
	D1583	MTZJ9.1C-T2	ZENER DIODE		*
	D1601-02	1SS133-T2	SI.DIODE		*
	D1651-52	MTZJ9.1C-T2	ZENER DIODE		*
	D1659-60	MTZJ9.1C-T2	ZENER DIODE		*
	D1704-07	1SS133-T2	SI.DIODE		*
	D1717-18	MTZJ9.1C-T2	ZENER DIODE		*
	D1751	SLR-342VR3F	L.E.D.		*
⚠	D1911	D3SB60	BRIDGE DIODE		
	D1941-44	1SR35-400A-T2	SI.DIODE		
	D1951	MTZJ12C-T2	ZENER DIODE		*
	D1953	1SR35-400A-T2	SI.DIODE		
	D1957-58	1SS133-T2	SI.DIODE		*
	TRANSISTOR				
	Q1101	2SC5083/L-P/-T	SI.TRANSISTOR		*
	Q1131-32	2SC2412K/QR/-X	SI.TRANSISTOR		*
	Q1161	2SC2412K/QR/-X	SI.TRANSISTOR		*
	Q1201-03	2SC2412K/QR/-X	SI.TRANSISTOR		*
	Q1261	2SC2412K/QR/-X	SI.TRANSISTOR		*
	Q1263-64	DTC124EKA-X	DIGI.TRANSISTOR		*
	Q1271	2SC2412K/QR/-X	SI.TRANSISTOR		*
	Q1351	2SC2412K/QR/-X	SI.TRANSISTOR		
	Q1361	2SC2412K/QR/-X	SI.TRANSISTOR		*
	Q1371-73	2SC4544-LB	SI.TRANSISTOR		*
	Q1521	2SC2655/Y/-T	SI.TRANSISTOR		*
⚠	Q1522	2SD2499-LB	SI.TRANSISTOR	H.OUT	*
	Q1561	2SC2785/JH/-T	SI.TRANSISTOR		*
	Q1562	2SA933AS/QR/-T	SI.TRANSISTOR		*
	Q1602	DTC323TK-X	DIGI.TRANSISTOR		*
	Q1651-54	2SC2412K/QR/-X	SI.TRANSISTOR		*
	Q1655	2SA1037AK/QR/-X	SI.TRANSISTOR		*
	Q1701-03	2SC2412K/QR/-X	SI.TRANSISTOR		*
	Q1704	DTC323TK-X	DIGI.TRANSISTOR		*
	Q1951	2SC2412K/QR/-X	SI.TRANSISTOR		*
	Q1952	2SA966/OY/-T	SI.TRANSISTOR		*
	Q1953	2SC2412K/QR/-X	SI.TRANSISTOR		*
	IC				
	IC1201	TA1242N	I.C(MONO-ANA)		*
	IC1251	BA7612N	I.C. (MONO-ANA)		*
	IC1271	TC4066BP	I.C. (DIGI-MOS)		*
⚠	IC1421	LA7832	I.C. (MONO-ANA)		*
	IC1541	KIA7809PI	I.C(MONO-ANA)		*
⚠	IC1602	LA4446	I.C. (MONO-ANA)		
	IC1651	UPC1851BCU	I C		
	IC1652	BA15218N	I.C. (MONO-ANA)		*
	IC1701	M37272M8-114SP	I C		
	IC1702	AT24C02-20P20	I C	(SERVICE)	
	IC1703	L78LR05E-MA	I.C(MONO-ANA)		*
	IC1751	GP1U281Q	IFR DETECT UNIT		*
⚠	IC1921	STR30134	I.C.		
	IC1951	TA78L009AP-T	I.C. (MONO-ANA)		
	OTHERS				
		LC30190-001B-A	LED HOLDER		*
	CF1001	FTP47.25MF	CERAMIC FILTER		*
	CF1131	CE41505-001	CERAMIC FILTER		*
	CF1161	SFSH4.5MCB	CERAMIC FILTER		*
	CF1501	CSB503F30-T2	CER.RESONATOR		*
	CF1701	CST8.00MTW	CER.RESONATOR		*
⚠	CN10PW	QMPD070-200-JC	POWER CORD		*
⚠	F1901	QMF0007-6R3J1	FUSE	6.3A	*
⚠	F1902	QMF0007-1R25J1	FUSE	1.25A	*
	FC1901-02	CEMG002-001Z	FUSE CLIP	(×2)	*
⚠	FR1720	QRZ9017-820	FUSI.RESISTOR	82 Ω 1/4W J	*
	J1003	QNZ0117-001	PIN JACK		*
	J1004	QNN0181-001	PIN JACK		*
	K1701	QQR0582-001Z	BEADS CORE		*
⚠	LF1901	QQR0864-002	LINE FILTER		*
⚠	RY1901	QSK0083-001	RELAY	or QSK0084-001	*

⚠	Symbol No.	Part No.	Part Name	Description	Local
	OTHERS				
	S1751	QSW0619-003Z	PUSH SWITCH	MENU	*
	S1752	QSW0619-003Z	PUSH SWITCH	CH-	*
	S1753	QSW0619-003Z	PUSH SWITCH	CH+	*
	S1754	QSW0619-003Z	PUSH SWITCH	VOL-	*
	S1755	QSW0619-003Z	PUSH SWITCH	VOL+	*
	S1756	QSW0619-003Z	PUSH SWITCH	POWER	*
	SF1101	CE42589-201	SAW FILTER		
⚠	SK1371	CE42535-001J1	CRT SOCKET		*
⚠	TH1901	CEKP007-002	P.THERMISTOR		*
⚠	TU1001	QAU0069-001	TUNER		*
⚠	VA1901	ERZV10V361CS	VARISTOR		*
	W1019	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	W1053-54	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	W1061-64	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	W1066-68	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	W1071-72	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	W1082-83	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	W1085	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	W1109	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	W1117-18	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	W1121	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	W1123	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	W1182-86	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	W1189	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	W1245-47	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	W1304-12	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	W1323-24	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	X1301	QAX0310-001Z	CRYSTAL		*
	Y1170-71	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*
	Y1541	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	*

REMOTE CONTROL UNIT PARTS LIST (RM-C754-1C)

⚠	Symbol No.	Part No.	Part Name.	Description	Local
		2AA015250	BATTERY COVER		*

PACKING



PACKING PARTS LIST

⚠	Ref.No.	Part No.	Part Name	Description	Local
[America model]					
	1	CP11499-015-A	PACKING CASE		*
	2	LC10083-002A-A	CUSHION ASSY	4pcs in 1set	*
	3	CP30055-001-A	TOP COVER		*
	4	CP30056-008-A	POLY BAG		*
	5	QPGA025-03505A	POLY BAG		*
	6	RM-C754-1C	REMOCON UNIT		*
⚠	7	LCT0107-001B-A	INST BOOK	[ENGLISH]	*
	8	BT-51006-1Q	REGI.CARD		*
[Canada model]					
	1	CP11499-015-A	PACKING CASE		*
	2	LC10083-002A-A	CUSHION ASSY	4pcs in 1set	*
	3	CP30055-001-A	TOP COVER		*
	4	CP30056-008-A	POLY BAG		*
	5	QPGA025-03505A	POLY BAG		*
	6	RM-C754-1C	REMOCON UNIT		*
⚠	7	LCT0107-001B-A	INST BOOK	[ENGLISH]	*
⚠	9	LCT0108-001B-A	INST BOOK	[FRENCH]	*
	10	BT-20071B-Q	SVC CENTER LIST		*
	11	BT-52002-1Q	WARRANTY CARD		*

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Hawaii :	2969 Mapunapuna Place, Honolulu, Hawaii 96819	(808)833-5828

JVC CANADA INC.

Head office :	21 Finchdene Square Scarborough, Ontario M1X 1A7	(416)293-1311
Vancouver :	13040 Worster Court Richmond B.C. V6V 2B3	(604)270-1311

JVC

AV27920(USM) #999
AV27920(CAM) #999
Printed in Japan
VP9803
DP4051

AV-27920(US&CA) STANDARD CIRCUIT DIAGRAM

■ NOTE ON USING CIRCUIT DIAGRAMS

1. SAFETY

The components identified by the⚠ symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

2. SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1)Input signal : Color bar signal

(2)Setting positions of each knob/button and variable resistor :Original setting position when shipped

(3)Internal resistance of tester :DC 20kΩ/V

(4)Oscilloscope sweeping time :H ⇒ 20μS/div
:V ⇒ 5mS/div
:Others ⇒ Sweeping time is specified

(5)Voltage values :All DC voltage values

* Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3. INDICATION OF PARTS SYMBOL [EXAMPLE]

●In the PW board :R1209→R209

4. INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

●Resistance value

No unit	:[Ω]
K	:[KΩ]
M	:[MΩ]

●Rated allowable power

No indication	:1/10[W]
Others	:As specified

●Type

No indication	:Carbon resistor
OMR	:Oxide metal film resistor
MFR	:Metal film resistor
MPR	:Metal plate resistor
UNFR	:Uninflammable resistor
FR	:Fusible resistor

*Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

●Capacitance value

1 or higher	:[pF]
less than 1	:[μF]

●Withstand voltage

No indication	:DC50[V]
Others	:DC withstand voltage [V]
AC indicated	:AC withstand voltage [V]

*Electrolytic Capacitors

47/50[Example]:Capacitance value [μF]/withstand voltage[V]

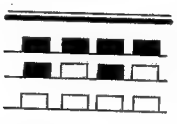
●Type

No indication	:Ceramic capacitor
MY	:Mylar capacitor
MM	:Metalized mylar capacitor
PP	:Polypropylene capacitor
MPP	:Metalized polypropylene capacitor
MF	:Metalized film capacitor
TF	:Thin film capacitor
BP	:Bipolar electrolytic capacitor
TAN	:Tantalum capacitor

(3)Coils

No unit	:[μH]
Others	:As specified

(4)Power Supply



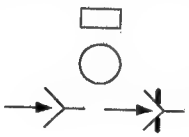
:B1
:12V
:9V
:5V

*Respective voltage values are indicated

(5)Test point

:Test point
:Only test point display

(6)Connecting method



:Connector
:Wrapping or soldering
:Receptacle

(7)Ground symbol

⊥ :LIVE side ground
⊥ :ISOLATED(NEUTRAL) side ground
⏚ :EARTH ground
▽ :DIGITAL ground

5. NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED(NEUTRAL) : (⊥) side GND. Therefore, care must be taken for the following points.

(1)Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.

(2)Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected , a fuse or any parts will be broken.

◇**Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.**

Mar. 1998 No.51370

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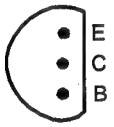
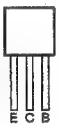
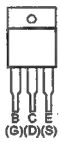
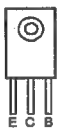
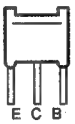
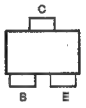
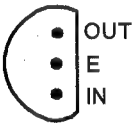
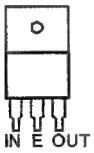
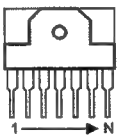
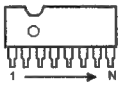
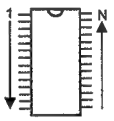
SEMICONDUCTOR SHAPES

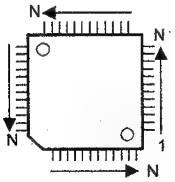
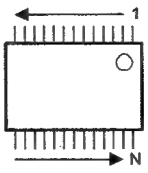
TRANSISTOR

BOTTOM VIEW	FRONT VIEW				TOP VIEW
					CHIP TR 

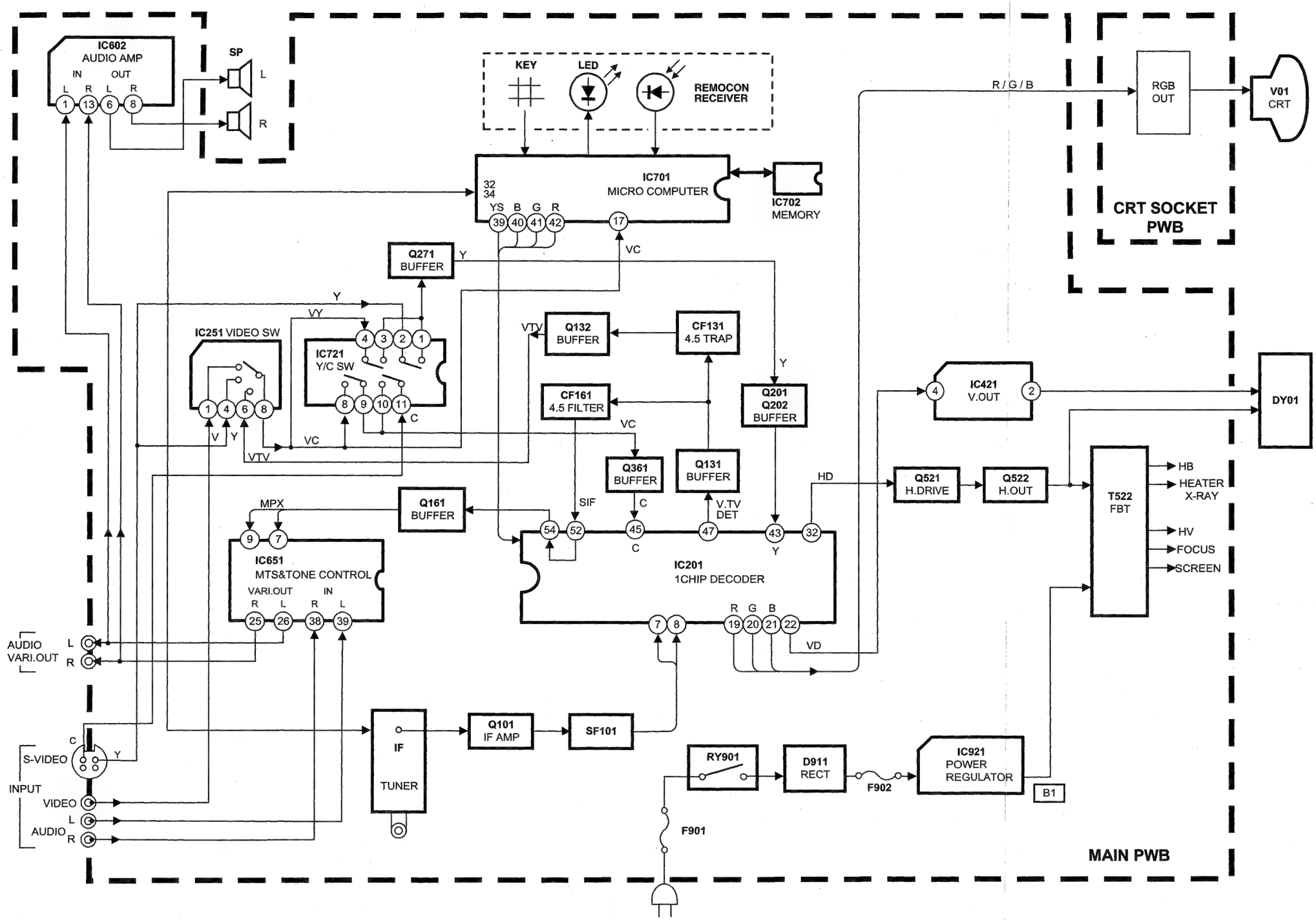
IC

BOTTOM VIEW	FRONT VIEW			TOP VIEW
				

CHIP IC

TOP VIEW		
		

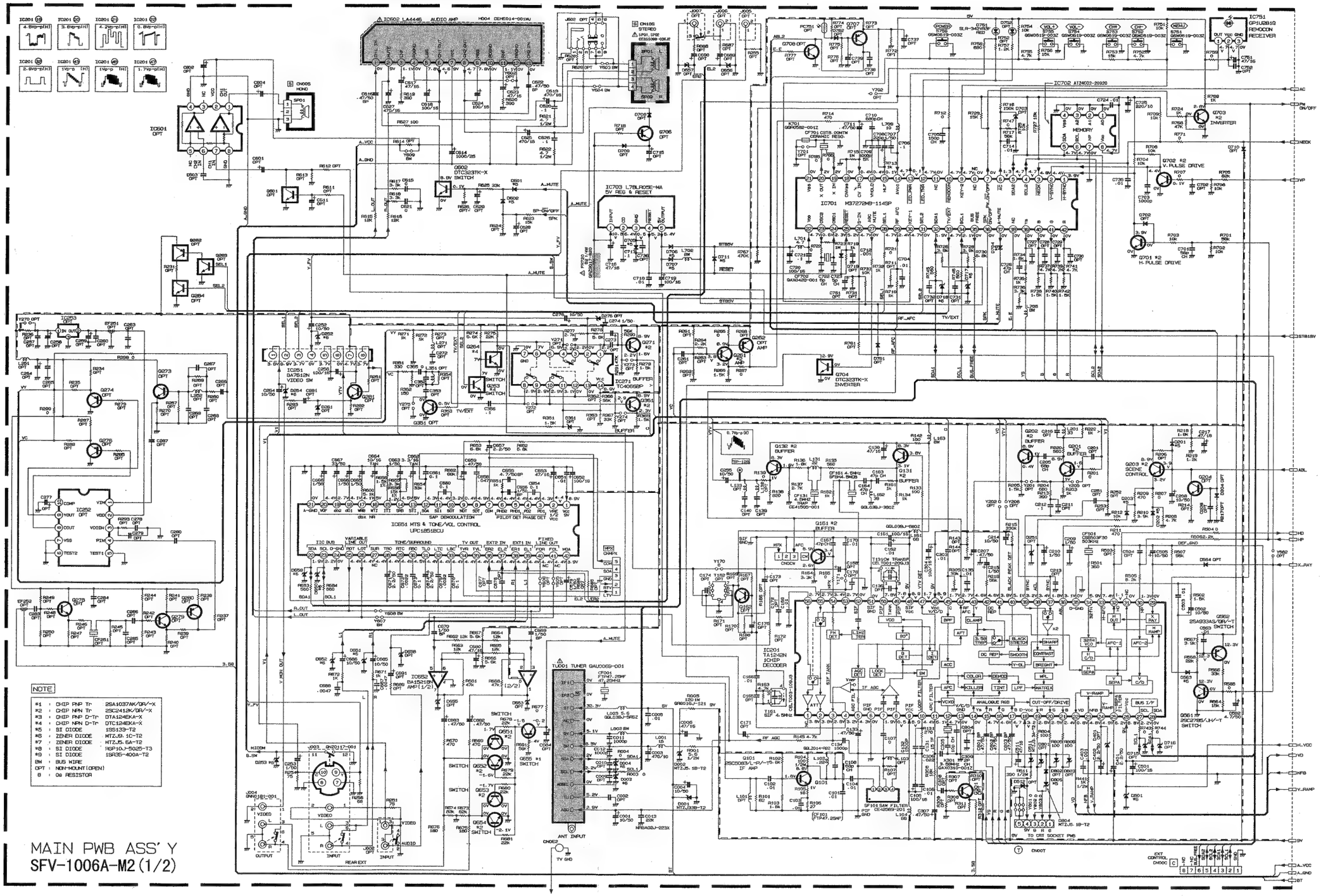
BLOCK DIAGRAM

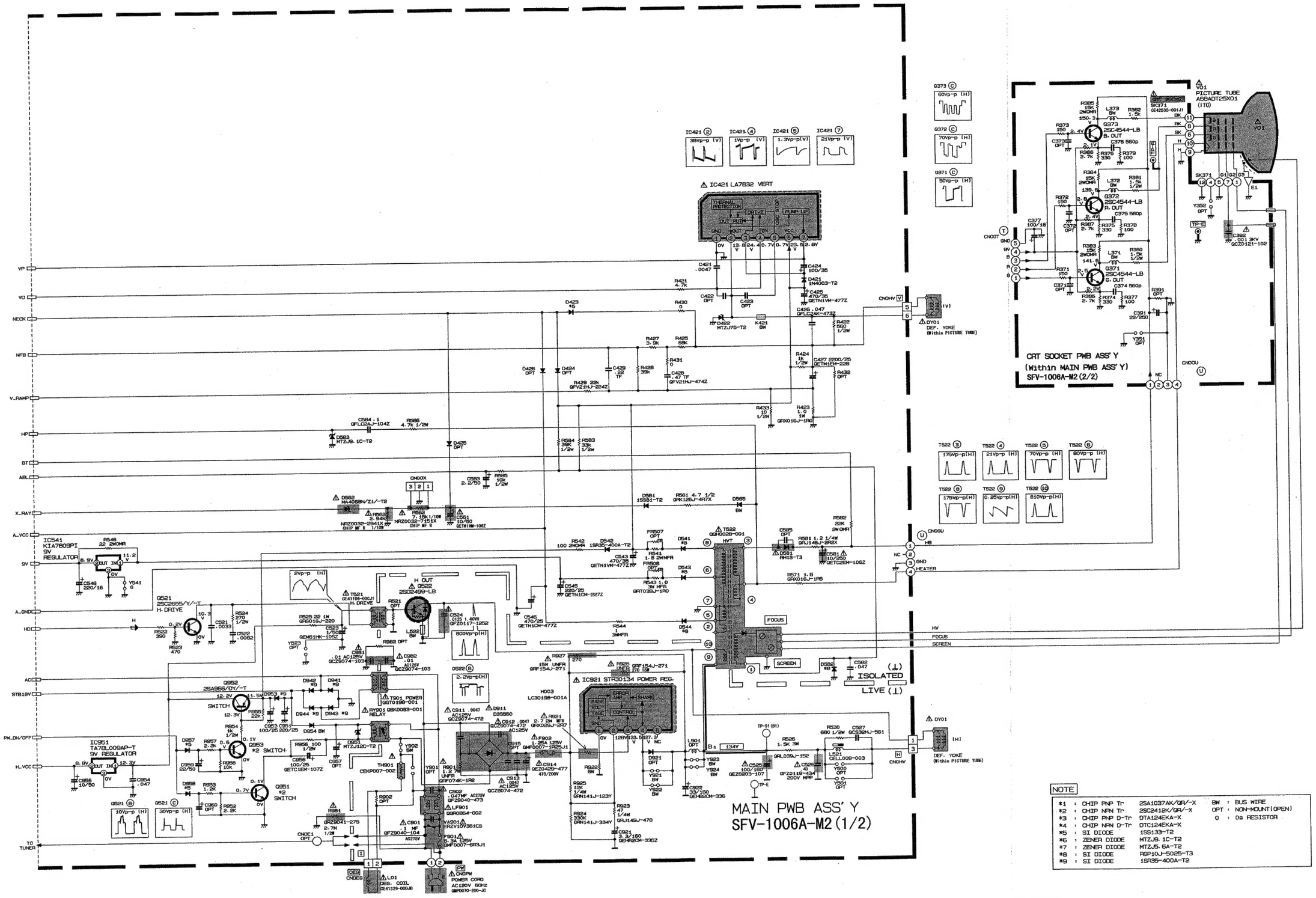


CIRCUIT DIAGRAMS

This schematic diagram is applicable to both (US) and (CA) models.

MAIN PWB, CRT SOCKET PWB CIRCUIT DIAGRAMS





NOTE

*1	: CHIP PNP Tr	2SA1037AK/GR/-X	BW	: BUS WIRE	
*2	: CHIP NPN Tr	2SC2412K/GR/-X	OPT	: NON-MOUNT(OPEN)	
*3	: CHIP PNP D-Tr	DTA124EKA-X	0	: 0Ω RESISTOR	
*4	: CHIP NPN D-Tr	DTC124EKA-X			
*5	: SI DIODE	1SS133-T2			
*6	: ZENER DIODE	MTZJ9.1C-T2			
*7	: ZENER DIODE	MTZJ5.6A-T2			
*8	: SI DIODE	RGP10J-5025-T3			
*9	: SI DIODE	1SR35-400A-T2			

PATTERN DIAGRAMS

MAIN PWB, CRT SOCKET PWB PATTERN

CRT SOCKET PWB ASS'Y(2/2)

MAIN PWB ASS'Y(1/2)

FRONT

TOP

(⏚)

(⏚)

TP-91 (B1)

(⊥) TP-E

■CHANNEL CHART (US)

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
○	○	VL	02		I
			03		
			04		
			05		
			06		
		VH	07		II
			08		
			09		
			10		
			11		
			12		
			13		
×	○	MID	A	14	I
			B	15	
			C	16	II
			D	17	
			E	18	
			F	19	
			G	20	
			H	21	
			I	22	
		SUPER	J	23	
			K	24	
			L	25	
			M	26	
			N	27	
			O	28	
			P	29	
			Q	30	
			R	31	
			S	32	
			T	33	
			U	34	
			V	35	
			W	36	
		HYPER	W+1	37	
			W+2	38	
			W+3	39	
			W+4	40	
			W+5	41	
			W+6	42	
			W+7	43	
			W+8	44	
			W+9	45	
			W+10	46	
			W+11	47	
			W+12	48	IV
			W+13	49	
			W+14	50	
			W+15	51	
			W+16	52	
			W+17	53	
			W+18	54	
			W+19	55	
			W+20	56	
			W+21	57	
			W+22	58	
			W+23	59	
			W+24	60	
			W+25	61	
			W+26	62	
			W+27	63	
			W+28	64	
		ULTRA	W+29	65	
			W+30	66	
			W+31	67	
			W+32	68	
			W+33	69	
			W+34	70	
×	○	ULTRA	W+35	71	IV
			W+36	72	
			W+37	73	
			W+38	74	
			W+39	75	
			W+40	76	
			W+41	77	
			W+42	78	
			W+43	79	
			W+44	80	
			W+45	81	
			W+46	82	
			W+47	83	
			W+48	84	
			W+49	85	
			W+50	86	
			W+51	87	
			W+52	88	
			W+53	89	
			W+54	90	
			W+55	91	
			W+56	92	
			W+57	93	
			W+58	94	
			W+59	100	
			W+60	101	
			W+61	102	
			W+62	103	
			W+63	104	
			W+64	105	
			W+65	106	
			W+66	107	
			W+67	108	
			W+68	109	
			W+69	110	
			W+70	111	
			W+71	112	
			W+72	113	
			W+73	114	
			W+74	115	
			W+75	116	
			W+76	117	
			W+77	118	
			W+78	119	
			W+79	120	
			W+80	121	
			W+81	122	
			W+82	123	
			W+83	124	
			W+84	125	
		SUB MID	A-8	01	I
			A-4	96	
			A-3	97	
			A-2	98	
			A-1	99	
○	×	UHF	14 ~ 69		IV

TOTAL 180CH
{ VHF 124CH
{ UHF 56CH

NOTE:
TO RECEIVE THE SUBSCRIPTION OR PREMIUM PROGRAMMING FROM CERTAIN CABLE COMPANIES.
SPECIAL ADAPTERS MAY BE REQUIRED.

■CHANNEL CHART (CA)

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
○	○	VL		02	I
				03	
				04	
				05	
				06	
		VH		07	II
				08	
				09	
				10	
				11	
				12	
				13	
×	○	MID	A	14	
			B	15	
			C	16	
			D	17	
			E	18	
			F	19	
			G	20	
			H	21	
			I	22	
		SUPER	J	23	III
			K	24	
			L	25	
			M	26	
			N	27	
			O	28	
			P	29	
			Q	30	
			R	31	
			S	32	
			T	33	
			U	34	
			V	35	
			W	36	
		HYPER	W+1	37	
			W+2	38	
			W+3	39	
			W+4	40	
			W+5	41	
			W+6	42	
			W+7	43	
			W+8	44	
			W+9	45	
			W+10	46	
			W+11	47	
			W+12	48	
			W+13	49	
			W+14	50	
			W+15	51	
			W+16	52	
			W+17	53	
			W+18	54	
			W+19	55	
			W+20	56	
			W+21	57	
			W+22	58	
			W+23	59	
			W+24	60	
			W+25	61	
			W+26	62	
			W+27	63	
			W+28	64	
		ULTRA	W+29	65	IV
			W+30	66	
			W+31	67	
			W+32	68	
			W+33	69	
			W+34	70	

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
×	○	ULTRA	W+35	71	IV
			W+36	72	
			W+37	73	
			W+38	74	
			W+39	75	
			W+40	76	
			W+41	77	
			W+42	78	
			W+43	79	
			W+44	80	
			W+45	81	
			W+46	82	
			W+47	83	
			W+48	84	
			W+49	85	
			W+50	86	
			W+51	87	
			W+52	88	
			W+53	89	
			W+54	90	
			W+55	91	
			W+56	92	
			W+57	93	
			W+58	94	
			W+59	100	
			W+60	101	
			W+61	102	
			W+62	103	
			W+63	104	
			W+64	105	
			W+65	106	
			W+66	107	
			W+67	108	
			W+68	109	
			W+69	110	
			W+70	111	
			W+71	112	
			W+72	113	
			W+73	114	
			W+74	115	
			W+75	116	
			W+76	117	
			W+77	118	
			W+78	119	
			W+79	120	
			W+80	121	
			W+81	122	
			W+82	123	
			W+83	124	
			W+84	125	
		SUB MID	A-8	01	I
			A-4	96	
			A-3	97	II
			A-2	98	
			A-1	99	
○	×	UHF	14 ~ 69		IV

TOTAL 180CH
{ VHF 124CH
UHF 56CH

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